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PRINCIPAL CONTENTS

Pride and Prejudice in Treatment of Cancer .. .. .. p. 39

Nutrition and Dental Caries in London School Children .. 44

Anaesthesia for Major Dental Surgery 46

Optimum Calcium Requirement 49

Cerebral Cholesteatoma 51

Leading Articles .. .. .. p. 55

Annotations 58

Prisoners of War in France and Belgium 60

Correspondence 61

Reviews 53

Epidemiology Section 71

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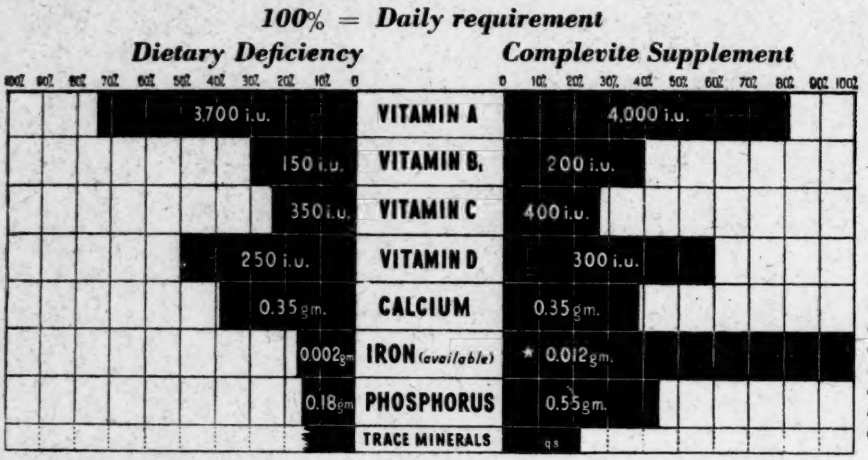

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BRITISH MEDICAL JOURNAL

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PRIDE AND PREJUDICE IN THE TREATMENT OF CANCER*

BY

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(*Concluded from p. 5*)

The Throat

Cancer of the throat is one of the most dreadful and distressing of the manifestations of this disease, and never have the sufferings of the victims been so vividly described as they were by Kipling in his tragic poem *A Death Bed*:

> "This is a gland at the back of the jaw
> And an answering lump on the collar-bone."
>
> "It will follow the usual course of—throats."
>
> "Since it is rather too late for the knife
> All we can do is to mask the pain."

In studying cancer in this region it becomes clear that one is turning the pages of one of the most brilliant chapters of British surgical achievement.

The Larynx

Discussion of carcinoma of the larynx should be confined to intrinsic tumours, for the so-called extrinsic carcinoma is really cancer of the pharynx. In operative treatment the teachings of Sir Felix Semon and Sir Henry Butlin were brought to their highest standard of success by Sir StClair Thomson. He recorded 70 cases operated on by laryngo-fissure, with only 2 deaths as the result of operation (*British Medical Journal*, 1928, **1**, 743). Excluding those dying of other diseases, 38 out of 55 patients were alive and well from five to nineteen years after operation—a net five-year survival rate of 69%. This is exactly the same as the rate being attained at the Christie Hospital and Holt Radium Institute, where radium is used according to the Finzi-Harmer technique. This figure is arrived at, however, by a follow-up of only 16 cases treated in 1932 and 1933. But in the course of twenty-eight years StClair Thomson operated on only 70 cases, which shows that fortunately the larynx is not a common site for this disease. With these small numbers it is obvious that the problem in this situation does not lend itself well to statistical study, but the figures cited are significant. Other workers claim equal success by external radiation in spite of the barriers of skin and cartilage.

The results of radiation therapy are obtained with practically no disability or mutilation. But it does not do to exaggerate the change of voice produced by partial laryngectomy. A useful voice is preserved, and among StClair Thomson's patients were men who continued to follow professions such as schoolmaster and physician, while one was a parson who preached twice every Sunday. The pitfalls of radiation, such as overdose to skin and necrosis of cartilage, have been largely overcome.

The brilliant results from partial laryngectomy by thyrotomy or laryngo-fissure only emphasize the limitations of operative treatment, for any more extensive operation entails serious mutilation and disability. When only total laryngectomy can be offered by surgery the radiotherapist can often retrieve what looks like an absolutely hopeless position, and in the more active and advanced lesions radiation may be of great value when surgical procedures have little to offer.

The Pharynx

In the case of the pharynx most statistical returns do not distinguish between different types of tumour or even give their exact situation. Reports on end-results in cancer of the pharynx must first of all supply figures for each anatomical site. This would give *some* indication of the nature of the tumour, but it is not enough. The character of the tumour and the histological grading must also be ascertained and recorded, not only for statistical review but also to determine the best line of treatment. The site of origin and the character of the lesion are more important than the extent. The size of the growth is no criterion. A small tumour may lead to disappointment, while a large one may react in a most favourable way. Carcinoma of the tonsil can be cured even if large glandular metastases are present, but quite a small lesion of the anterior pillar of the fauces or the pyriform fossa may be incurable.

Since the tumours range from lympho-epithelioma to hard, warty, localized growths there is a great difference in their radiosensitivity. Exact details of the site and character of the growth are essential, and without these details statistics are valueless. But though we have not these details or statistical proof to guide us in regard to cancer of the pharynx we do know that tumours of the nasopharynx, the valleculae, the pyriform fossa, the deep pharynx, and the base of the tongue can often be made to disappear in a most remarkable manner by radiotherapy. Some of the results of radium beam therapy are most encouraging, but it may be that deep *x* rays can accomplish as much.

In tumours of the hypopharynx, essentially a disease of women about the menopause, an important consideration

* The Bradshaw Lecture delivered before the Royal College of Surgeons of England on November 27, 1940.

is the possibility of prevention. The Plummer-Vinson syndrome may or may not be the direct cause of tumours of the hypopharynx and it may occur without anaemia, but, as Witts has pointed out, the anaemia which is very common in women suffering from these tumours is due to iron deficiency and can be cured by the administration of iron, which not only repairs the anaemia but also restores the epithelium. The cracks at the corners of the mouth heal, the tongue is reclothed with papillae, the epithelium of the pharynx becomes more normal, and dysphagia is relieved.

The Oesophagus

Treatment of carcinoma of the oesophagus by surgery or by radiation has been disappointing, though there have been brilliant isolated successes. The tumour is of the same histological type as carcinoma of the cervix uteri. But here, unfortunately, we are dealing with a canal with thin walls which is immediately surrounded by vital structures. The growth is nearly always infiltrating the wall of the oesophagus when first diagnosed. The tumour is very sensitive to radiation, and its rapid destruction as the result of direct radium treatment often leads to perforation. External methods of radiation are therefore being more assiduously tried. There have, however, been no lasting cures by radiation in proved cases: reports in the literature refer to cases without histological proof and with inadequate periods of observation after treatment. There are some encouraging cases, but many disasters have occurred from serious changes in the lung. It is to be hoped that with further developments in technique greater success will be achieved.

Surgical excision has been attended with a few successes in the hands of bold operators, particularly in cases in the cervical portion and the lowest part, even with preservation of the channel. A few successes have been achieved also after removal of the middle portion. Garlock of New York (*Surg. Gynec. Obstet.*, 1940, **70,** 556) has reported 7 cases, in 6 of which the patient survived the radical operation. Four are still well—one of them two years and eleven months after operation. In Torek's historic case of transthoracic excision the subject lived for thirteen years and died of old age without recurrence. Grey Turner had one successful case, but the patient died of nephritis nineteen months afterwards. Lately Wookey (*Brit. J. Surg.*, 1940, **27**, 696) reported 4 cases of transthoracic removal, in 3 of which he adopted a new technique by approaching through the right side of the chest with ligature of the vena azygos major.

Grey Turner, who dealt fully with this subject in his Bradshaw Lecture of 1935, advises that if the history is short and there is no evidence of secondaries, and if improvement is rapid after a gastrostomy, radical operation should be considered. But our real hopes for the future lie in finding some method by which radiation can be brought safely to bear on this perilous region. The growth itself is vulnerable to attack, but a way must be found to protect the vital parts in the immediate neighbourhood.

Except as a preliminary to radical excision gastrostomy is now seldom required. By the method of intubation introduced by Charters Symonds and so ingeniously improved and applied by Souttar we can bring relief and comfort to and prolong the life of sufferers from oesophageal cancer.

The Rectum

Surgical treatment of carcinoma of the rectum, based on the scientific work of Ernest Miles, may attain an 83% five-year freedom rate in Stage A cases, and between 40% and 50% in all cases (Gabriel). For many years efforts have been made to treat the disease in this situation by radiation therapy. Unfortunately the rectal mucous membrane is generally just as radiosensitive as the tumour. Gordon-Watson endeavoured to treat the condition with radium and did pioneer work on the surgery of access, but, as he stated in his Bradshaw Lecture of 1937 (*Lancet*, 1938, **1**, 239), he came to the conclusion that "although brilliant results were obtained in a small proportion of operable cases, the results were too uncertain to justify its use in an operable case with our present knowledge, except when a radical operation is contraindicated on general grounds." He has also reported, however, that although it was only in a small proportion, he had in several instances reduced fixed inoperable cases to a state of complete quiescence, if not cure, and that some of these patients remained in good health for periods ranging from seven to ten years (*Proc. roy. Soc. Med.*, 1935, **28**, 1251). The rare radiotherapeutic successes may be in cases of an undifferentiated type.

Serious efforts are being made to treat the condition by external radiation not only with the usual 200 kV machines but with large radium bombs and *x*-ray plants working up to a million volts. Ralph Phillips has treated a few cases by the latter method at St. Bartholomew's Hospital, and among them he showed me the notes of a patient aged 41 in whom an inoperable growth has been made to disappear and, two years after the treatment was begun, the colostomy has been closed.

The Uterine Cervix

In cancer of the uterine cervix the best British results from operative treatment are those attained by Victor Bonney, whose pioneer work with Comyns Berkeley laid the foundations in this country, of the sound surgical treatment of that condition. Table II provides a fair basis for comparison between Bonney's five-year figures and those of the Marie Curie Hospital, where the best results have been attained by radiation treatment.

TABLE II

Victor Bonney: Cases operated on up to the end of 1928

Stage	No. of Cases	Gross Five-year Survival Rate
I	212 (no glands)	109 (51.4%) } = 38.8%
II	154 (with glands)	33 (21.4%) }
III		
IV	0	Inoperable

(*Transactions of the Medical Society of London*, 1934, **57**, 196.)

Marie Curie Hospital: Cases treated 1925 to 1933

Stage	No. of Cases	Gross Five-year Survival Rate
I	40	34 (85%) } 65.7% } = 42.6%
II	170	104 (61.1%) }
III	459	147 (32%) }
IV	133	11 (8.2%) Inoperable
Total	802	296 (36.9%)

(Medical Research Council Report No. 236, 1939.)

The operation cases have not been separated into stages on the lines of the League of Nations classification, but if Stages I and II are counted as definitely operable radiotherapy is immensely better than surgical treatment, and even if Stage III cases are included among the operable ones, which is giving a distinct advantage to surgery in the calculation, the table still shows that better results are obtained by radiotherapy.

It is stated that 10% of all recurrences develop after the fifth year, and that therefore only ten-year survival rates should be accepted for a true assessment of results.

Table III shows a comparison of the ten-year survival rates, and again the advantage is slightly in favour of treatment by radiation, although the cases date back to a time when the technique was not as good as it is to-day.

TABLE III

Victor Bonney: Cases operated on up to the end of 1923

Stage	No. of Cases	Gross Ten-year Survival Rate
I	156 (no glands)	61 (39.1%) } =30%
II	110 (with glands)	19 (17.2%) } =30%
III		
IV	0	Inoperable

(*Transactions of the Medical Society of London*, 1934, **57**, 196.)

Marie Curie Hospital: Cases treated 1925 (3 Months) to 1928

Stage	No. of Cases	Gross Ten-year Survival Rate
I	10	8 (80%) } =48.9% } =30.4%
II	37	15 (40.5%) } =48.9% } =30.4%
III	124	29 (23.3%)
IV	45	2 (4.4%) Inoperable
Total	216	54 (25%)

(Medical Research Council Report No. 236, 1939.)

The results obtained at the Marie Curie Hospital are so good that they naturally stimulate inquiry. It has been said that a large number of the patients are nulliparous women and that maybe some cases were not carcinoma. I found the proportion of nulliparae to be 12%—8% being married and 4% unmarried. This would strike the old teachers of gynaecology as unduly high, but I do not consider it so in a hospital staffed by women, for at a general hospital like the Middlesex, taking the cases for 1936, 1937, and 1938, there were 11 nulliparae among 118 patients with carcinoma of the cervix, or 9.2%, and 4 of the patients were unmarried. It is said that a large proportion of early cases go to the Marie Curie Hospital, but in actual fact the proportion of Stages I and II cases is very low. It is also said that maybe this hospital receives selected cases only, because several unsuitable cases are not sent for treatment; but I am informed that *all* cases seen by the surgeons at their other hospitals are referred to the Marie Curie Hospital for radium treatment, with the sole exception of the Royal Free Hospital, from which *every* third case is referred. The success of the hospital is really due to the following factors. It is very well equipped, the staff is extremely expert, and there is a large personnel; but the most important factor of all is that the most meticulous care is taken in carrying out the treatment, in following exactly the selected technique, and in making every effort to improve the local and general condition of the patient before radiation treatment is undertaken. Comparable results are obtained at other first-class radiotherapy centres, and the figures in Table IV of a general hospital like the Middlesex, with a large radiotherapy department, are also interesting. All the cases were seen first by the gynaecologists, and it may fairly be assumed that Bonney and his junior colleagues, both of whom were his pupils, would have a predilection for operative treatment unless there was some local or general contra-indication.

TABLE IV.—*The Middlesex Hospital, January 1, 1932, to June 30, 1935*

A: Operation Results

Stage	No. of Cases	Gross Five-year Survival Rate
I (no glands)	39	16 (41.0%) } =38.4%
II (with glands)	13	4 (30.7%) } =38.4%
III		
IV	0	Inoperable

B: Radiotherapy Results

Stage	No. of Cases	Gross Five-year Survival Rate
I	9	6 (66.6%) } =44% } =34.9%
II	16	5 (31.2%) } =44% } =34.9%
III	38	11 (28.9%)
IV	35	3 (8.5%) Inoperable
Total	98	25 (25.5%)

The numbers are not large enough for statistical study, but they are distinctly significant. In Stage I and II cases the radiotherapy results are better, but when Stage III cases are included as operable the percentage advantage is with surgery. But only one-quarter of the radiotherapy cases were Stage I and II and less than a half when Stage IV cases are excluded, whereas three-quarters of the operation cases were Stage I. Moreover, the radiotherapy cases included 4 of palliative *x*-ray treatment and 5 treated by radium only and judged to be unfit for the full course; while 14, with only 1 five-year survivor, were treated before the Paris technique was adopted.

The operative mortality still remains in the neighbourhood of 10%, to which Bonney reduced it in favourable cases. The dangers of radiotherapy, which at first were a serious consideration, have been so mastered that at the Marie Curie Hospital only 2 cases of fistula have been seen in the last 700 cases.

Study of the available figures leads to the conclusion that better results can be obtained by radiotherapy than by operation in cases of carcinoma of the uterine cervix.

As a final consideration it is well to bear in mind that the radical operation for carcinoma of the cervix is one of great difficulty and that few can attain the results of Bonney and his colleagues. Radiation treatment, on the other hand, can be copied with meticulous care, and, provided the staff and equipment are adequate, good results should be attainable in many centres. Some cases do not respond to radiotherapy. They should be submitted to operation without delay, and they serve to emphasize that the course of safety is for surgeon and radiologist to work together.

The Breast

Consideration of cancer of the breast naturally calls to mind, among men of our time, the names of three of the seven Walker Prizemen of our College—Harold Stiles, Sampson Handley, and Lenthal Cheatle—who have devoted a large part of their lives to the study of this condition. The results of operation in Stage I cases are excellent. In the thorough and capable hands of Gordon-Taylor an 84% ten-year survival rate has been attained in cases traced from ten to twenty-five years. In more advanced cases, however, the results are most disappointing, and it is terrible to reflect that if the axillary glands are involved over 60% of our patients die of the disease within five years of operation.

In order to avoid the mutilation from which patients naturally recoil efforts have been made to ascertain whether radiation could safely be recommended as a substitute for surgery in Stage I cases, but the results achieved do not justify such a course. Keynes's efforts to attain by radium implantation results comparable to surgery were a real contribution to technique, but they revealed the limitations of radium implants with their localized action. The area to be dealt with is very extensive, and Keynes himself has realized that external radiation has advantages over implantation.

When considering reports of favourable results from external radiation alone it must be remembered that the recorded cases are few, that as a rule the diagnosis is not

proved by pathological investigation, and that in early cases there is no unequivocal sign which will enable the clinician to make a diagnosis with absolute certainty. Nevertheless there is no doubt that successful results can be obtained, and if operation is refused or contraindicated radiation treatment is justified in Stage I cases.

In seeking for assistance from radiation therapy while still practising surgical excision, attempts have been made by pre-operative or post-operative, or by pre-operative *and* post-operative radiation to reinforce the attack on the disease. In favour of pre-operative radiation it may be said that it demonstrates which cases are radiosensitive, and these are just the ones in which radical surgery is likely to fail. It also decreases the vitality of the cancer cells previous to operative disturbance. It may interfere with healing, but this is minimized by proceeding to operation directly the pre-operative course is completed. In regard to post-operative radiation, it has to be remembered that after operation the tissues will not stand a full dose owing to the surgical trauma and the impaired blood supply; and nothing less than the full dose is likely to be really effective. Figures from some centres indicate that a combination of pre-operative and post-operative treatment may be the best.

The view is held by some that radiation alone may be the best treatment in Stage II and Stage III cases. In its favour it is argued that a full dose of radiation can be given without interruption, and that the radical operation is often dangerous, as it involves the risk of cutting into cancerous tissue in the axilla. But we have no convincing statistics to prove that the results of radiation are better than those of operation. Mass statistics, with percentages often based on an insufficient number of cases, are quoted in support of radiation treatment, and even averages of percentages (a most fallacious use of statistics) are marshalled in further support. Our experience at the Middlesex Hospital would not permit us to subscribe to this view.

It may be that we have had enough of statistics based on large series of cases treated on certain definite lines and that what is required is that each case should be treated in the way which appears best after considering all the circumstances. We may thus ascertain whether, with the exercise of judgment, the gross results can be improved, and then, by analysis of those results, find out which treatment is best for each class of case.

Our accumulated experience seems to me to justify us in regarding each case at the outset as a radio-surgical problem, and then proceeding as follows:

In a *clinical Stage I* case give a short intensive course of radiation. If the tumour shows signs of disappearing rapidly it is very radiosensitive and likely to be unpromising for surgery. Radiation should therefore be continued. If the response to radiation is not very striking, then radical operation should be undertaken immediately after about a third of the full dose has been given. The specimen should be examined with meticulous care, and further procedure planned on the two alternative results of the investigation: (1) if there is no evidence of extension to the glands the case is pathologically proved to be Stage I, and no further radiation is indicated; (2) if, on the other hand, the glands are found to be involved the case is pathologically Stage II, and the course of radiation should be completed. Some of the 60% of failures after radical operation in Stage II cases might be saved by this post-operative completion of the radiation course.

If the case is *clinically Stage II or Stage III* radiation treatment is definitely indicated at the outset. A good response would encourage continuance of radiation, for on biological grounds the case is probably unsuitable for operation. If, on the other hand, the response is not good, or there is a residual lump, the breast should be removed without opening the axilla. Radiation treatment should be completed after operation, for glandular deposits are more constantly made to disappear than the primary growth. The risk of disseminating the disease that is involved in clearing the cancerous contents of the axilla would be avoided by this procedure.

Finally, there is no question of the good that radiotherapy does in some advanced cases in this and other situations and also in the case of some metastases, but it must be admitted that in others it only adds to the patients' sufferings. Radiotherapists should therefore never be pressed to give treatment as a placebo or in cases that are obviously hopeless.

The Cancer Act

From a study of the present position of cancer treatment certain points are clear: first, that about half the patients suffering from cancer need some form of radiation therapy; second, that this difficult work can only be undertaken satisfactorily under the most favourable conditions; and, third, that intensive research is required in every aspect of the cancer problem.

The first two requirements are not being met, for it is estimated that in this country only about a quarter of the sufferers obtain treatment of a skilled nature at hospitals adequately equipped and staffed, and that where diagnosis requires highly technical investigations the proportion is smaller. The Radium Commission made repeated and urgent representations that to secure a reasonable standard of service for the treatment of cancer cases throughout the country there was need for the Government to attack the whole problem along national lines. The Cancer Act is designed to achieve this object. By March, 1942, local authorities, co-operating if necessary with neighbouring authorities, have to submit schemes for the approval of the Ministry of Health, making arrangements to secure that the facilities for the treatment of persons suffering from cancer are adequate for the needs of the county or borough. We are therefore on the eve of a great development of regionalization of hospital services for this specific purpose, and those studying the question of regionalization will do well to bear in mind this particular need, for it may be found that the arrangement of localities necessary for the cancer service will be suitable for other purposes also. Under the provisions of the Cancer Act local authorities are empowered to make grants for extensions of voluntary hospitals and for the maintenance of those extensions. Those who fear for the future of the voluntary hospitals should note the words of Sir Arthur MacNalty, who, when Chief Medical Officer of the Ministry of Health, said that "only by co-operation in hospital services regionally and nationally will the difficulties of expense of voluntary hospitals be overcome and the voluntary principles of which this country is so proud be safeguarded."

Cancer Centres

In an explanatory circular issued to local authorities in May, 1939, it is explained that the provision of adequate facilities for cancer treatment means both by surgery and by radiotherapy, including treatment by radium and by deep *x* rays. This is satisfactory, for it makes it clear that the centres are to be Cancer Centres and not just Radium Centres. The Minister's view was expressed that treatment must necessarily be concentrated in those comparatively few hospitals which have on their staffs skilled radiotherapists and physicists as well as surgeons, which possess the requisite specialized departments, and which contain enough beds to keep the radiotherapeutic department, with its expensive equipment of radium and apparatus, fully employed. The Minister hoped that there would be full co-operation between the authorities and the voluntary

hospitals, and he enjoined that the hospitals which already hold supplies of radium and which otherwise possess adequate facilities should be utilized to the greatest possible extent.

The Minister pointed out that surgical operation still remains the only practicable, or the most suitable, form of treatment for a large proportion of cases, and that for this purpose it may be found necessary to make use of some hospitals in which radiation treatment is not available. He lays down the condition, however, that "where use is made of such a hospital a patient should be treated there only when it has been decided, after consultation between the appropriate specialists, that surgery without radiation is the proper form of treatment for the case." This applies to at least half the patients receiving treatment. Is such an instruction justified by the present state of our knowledge? And, if so, should not a similar consultation be required before radiation treatment is allowed? In point of fact it is certain that there are not enough experienced radiotherapists available for such consultations.

One of the most important matters to ensure the success of the scheme will be proper central control. It may be true that the Ministry is to appoint an expert advisory committee with representatives of medicine, surgery, gynaecology, radiotherapy, pathology, and public health, and that this expert committee dovetails with the Medical Advisory Committee of the Ministry, which includes the Presidents of the three Royal Colleges. Such Advisory Committees are often chosen but seldom called. The real work will be done by an executive body, and in my view that body will be best equipped for its task if it is made directly responsible for the management of a National Centre. It will then be in constant and immediate touch with those actively engaged in treatment and research. The National Cancer Centre would also be the appropriate place for the establishment of a central bureau for the collection and study of records.

The provision of adequate facilities for cancer treatment entails the establishment of several centres in addition to those already recognized as efficient, and it is estimated that at least a thousand additional beds will be needed. The establishment of hundreds of consultation centres for diagnosis and for the following up of patients will be required, and in this way the essential link between general practitioners and hospitals will be provided.

Each centre must be a fully equipped hospital or branch of a hospital specially devoted to this work. It must have plenty of beds, and it must have rooms for private patients. In the future, even more than in the present, treatment of this disease will have to be carried out in institutions, and all classes of the community must be eligible for admission. There must be an expert staff and every facility for diagnosis and treatment. There must be a full-time radiotherapeutic staff with at least two experienced members. There must be ample radium, so that all methods of application can be employed. There must be a generous equipment of *x*-ray apparatus, so that treatment and dosage can be prescribed and spread as the radiotherapist requires and not just meted out so that all who demand shall share in what is going. There must be a large staff, so that treatment can be supervised and cases carefully studied. There must be an expert surgical staff, carefully chosen for their special aptitude in diagnosis and operative skill in various regions. There must be well-staffed and well-equipped departments of pathology and physics. There must be well-paid posts for assistant members of the staff, and facilities for those undergoing training, so that there will be a plentiful supply of radiotherapists to fill senior posts as they fall vacant.

Medical Education and Research

When schemes are submitted for approval two aspects of the proposals will be of special concern to our College. One is that facilities for medical education shall be safeguarded, and the other that research shall be encouraged.

In regard to medical education, it must be remembered that, while the treatment of cancer may be very special work requiring much postgraduate study and experience, instruction in diagnosis together with the observation of the results of treatment is essential for the undergraduate. The success of a cancer service depends on early diagnosis, which depends in turn on the recognition of the significance of symptoms, and for this purpose the general practitioner is the first essential link in the chain. Every medical school, therefore, if not a treatment centre, must be a consultation centre for diagnosis and for observation after treatment.

In the Cancer Act no provision is made for research, but the treatment of cancer can be carried on efficiently only in a spirit and atmosphere of inquiry, and if any centres are planned without regard to the need for research the work at those centres will not be of the highest standard and they will fall behind in the effort to bring relief to sufferers from this disease.

In clinical research the records department will assume greater and greater importance, for more detailed returns will be required. Every case should have a record of the exact site, extent, and duration of the lesion, and there should be an agreed "staging" for all sites. The records should include *exact* details of the histology, and the tumour should be carefully graded. Uniformity in methods of making returns is essential.

Immediate Needs

The Cancer Act provides a splendid opportunity. Great hopes are founded on it, but their fulfilment will depend on the genius and foresight of those responsible for carrying out its provisions. Regional schemes cannot be formulated for some time, but there are two urgent needs which should be provided for without delay. As already mentioned, one urgent need is the formation of a central national authority to study the problem and guide local authorities; the other is provision for the training of personnel.

There is a serious shortage of trained personnel, and in my opinion those already experienced in this work should be released from the Services and those anxious and fitted to take up the practice of radiotherapy as a career should be reserved from mobilization.

To fit himself for a career as a radiotherapist a graduate first requires to attain the standard of one of the higher surgical qualifications. He needs at least twelve months' training at a recognized centre, and must obtain a special diploma in radiology and later the higher diploma of the Faculty. But the only training worth while is experience—like the apprenticeship served to medicine and surgery and several specialties. Postgraduate courses are useful for obtaining the hall-mark of a diploma, but responsibility under supervision is the real training. The trainee should therefore hold a resident post in a cancer department, and, before having independent charge of patients, he should serve for about three years in an appointment equivalent to that of a registrar or first assistant. It is obvious, therefore, that the junior posts must carry generous remuneration, that there must be good prospects of promotion, and that the higher positions must be equal to those in any other branch of the profession.

The director's post must carry the full status of a staff appointment. In university centres he should be given

professorial rank, and he should not be barred from private practice in the institution. This can easily be limited by the number of private beds at his disposal. The best men will get the best results, and they are entitled to their reward both in professional status and in income. However lavish may be the provision of armamentarium, in radiotherapy as in surgery it is "the man behind the gun" that counts.

Conclusion

It is twenty-three years since I had the honour of delivering a Hunterian Lecture in our College. That too was in wartime. On that occasion I told the story of the conquest of the hosts of death—of the taming of the typhoid group of organisms by protective inoculation. Many other diseases have been controlled and almost conquered in our time, and even during the last twenty years of peace. I have no doubt that cancer will be added to their number. The possibilities opened up by recent research increase our confidence in ultimate success.

But until many questions are answered and we are armed with full knowledge of the cause of this disease, and thus on the way to prevention, we have to face the task of giving the best treatment to relieve and, as I have shown, oft-times to cure. I hope I have said enough to show that in addition to proved and trusty means of treatment we have powerful new weapons with which to combat the disease; but they are powerful for evil as well as for good, and need skilled and experienced control. I have emphasized, therefore, that the training of more men and women to use these weapons should be undertaken without delay. It is obvious that in the future there must be closer co-operation between surgeons and radiologists if we are to do the best for our patients. Special tumour clinics should be arranged; teams should be carefully chosen and certain regions assigned to special surgeons. A competent team must include surgeon, radiologist, pathologist, and physicist. It is abundantly clear, therefore, that there is urgent need for far greater facilities and a large army of workers.

I have spoken of the sturdy heroic work which has been done in the past and of the successes which have been achieved, but in our College we are only too well aware of the gaps in our knowledge and of the colossal amount of research work still to be done.

"And here will I make an end, and if I have done well, and as is fitting the story, it is that which I desired"—not only because of the vital importance of the subject, but also because I wished to do honour to William Wood Bradshaw, by whose devoted widow this Lecture was founded. But whether I have done well or ill, I hope I shall be acquitted of ungraciousness if I observe that, greatly as I appreciate the honour done me, much of my Lecture goes to show that those who in the future may be disposed to make benefactions to our College will do a greater service to humanity and ensure a richer harvest from their gifts by providing endowments for research than by founding eponymous lectures to be delivered within its walls.

O. Witt Mitchell and O. D. Chapman (*New York State J. Med.*, 1940, **40**, 1308) record thirty-eight cases of *Staphylococcus aureus* septicaemia in patients aged from 3 to 65. Thirty-one were males and seven females. Twenty cases were examples of cellulitis, boils, or carbuncles, and eighteen of osteomyelitis, which with three exceptions were all in children. Half the patients with cellulitis, boils, or carbuncles had primary lesions on the neck or face. Of the osteomyelitis cases the tibia was the first bone to be involved in nine and the femur in six. Fifteen of the patients with primary lesions and seven of the patients with osteomyelitis died.

A SURVEY OF NUTRITION AND DENTAL CARIES IN 120 LONDON ELEMENTARY SCHOOL CHILDREN

BY

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A radiological investigation to study growth in school children was being carried out at University College by the late Prof. Woollard and the late Dr. Matthew Young which necessitated the six-monthly examination of 200 elementary school children between the ages of 5 and 8 years. It was hoped that this investigation would throw some light on the problem of nutrition.

In addition to the taking of radiographs the children were weighed and measured (without shoes), and various other clinical notes were made. It seemed of interest, to complete the picture, to have some information on the condition of the teeth, so a quick examination was made, and the findings form the subject of this survey. The period covered was one year, during which they were examined three times, although only the first and third inspections are considered here. As usually happens in this kind of investigation the numbers of children available dwindled considerably by the end of the year. Those examined appeared to be in fairly good physical condition on the whole and most of them had had extra milk at school.

When making the dental examination the buccal surfaces of the teeth were first tested with a probe for structural defects as shown by varying degrees of roughness, pits, etc., and graded into four categories. The grading was, so far as the personal factor allowed, similar to that used by M. Mellanby. Perfect smoothness of surface was graded as normal or category 0; and to categories 1, 2, and 3 were allotted teeth showing slight, marked, and severe roughness and pitting. It must be emphasized, to avoid misunderstanding, that the types of defects referred to here are those first recognized by M. Mellanby (1923, 1927, 1934) and included by her under the heading of "hypoplasia"; they are much more common, though less obvious, than the generally recognized gross type and present a different microscopical structure. In a dental survey J. D. King (1940) distinguished between the two kinds by calling them "M-hypoplasia" and "G-hypoplasia" respectively, and whereas it has been proved by many observers (Mellanby, King, Hughlings Davies, etc.) that the former type is to be found associated with dental caries, there is some doubt as to whether any association exists between dental caries and G-hypoplasia—in fact, King could find no association between these two conditions in the children examined by him in the Island of Lewis.

Having graded the structure of the teeth, the amount of caries was then noted. Owing to lack of time it was not possible to explore every tooth thoroughly with the probe; the teeth were also in some cases very dirty, so that very early caries must have been overlooked. The carious teeth were graded roughly into three categories, according to the size of the carious area: caries 1 included teeth with cavities up to about the size of a large pin's head; caries 2 included those with cavities larger than grade 1 but involving less than a third of any one surface; and caries 3 included all teeth with cavities involving more than a third of one surface. This method is admittedly rough and the grading arbitrary, but it serves to give an indication of the amount of spread of caries over a period of time, and when assessing the amount of caries per mouth is much more satisfactory than giving a mere percentage of teeth carious, which makes no allowance at all for the size of the carious cavities.

The dental examination was made by me and the observations were taken down at dictation by a second person. A complete survey was first made of the mouth for structural defects, then a second round of the teeth was made to assess

caries, by which time the figure assigned to any particular tooth for M-hypoplasia had been forgotten; the two sets of findings should therefore be quite independent.

Structural Defects (M-hypoplasia)

An average hypoplasia figure was first calculated for each type of tooth to see how the structure compared one type with another (see Table I); this figure is obtained by adding up the marks allotted to all the individual teeth and then dividing by the total number of teeth.

In Table I the types of teeth were arranged in ascending order of the average hypoplasia figures at age 5; the figures for ages 6 and 7 were subsequently added, and were found to be in much the same order. The teeth showing the best structure are the lower incisors and canines, and the worst are the molars—the upper incisors and canines being intermediate. The earliest-formed teeth are therefore those which have the best structure.

TABLE I

	Age 5 (34 Children)		Age 6 (55 Children)		Age 7 (32 Children)	
	Total No. of Teeth	Average Hypoplasia* Figure	Total No. of Teeth	Average Hypoplasia Figure	Total No. of Teeth	Average Hypoplasia Figure
Lower :						
Lateral incisors	64	0.23	81	0.26	22	0.32
Central ,,	59	0.27	30	0.53	14	0.29
Canines ..	68	0.37	110	0.35	58	0.16
Upper :						
Canines ..	67	0.42	108	0.75	61	0.49
Lateral incisors	64	0.66	89	1.09	40	0.63
Central ,,	59	0.85	57	1.04	26	0.58
Lower :						
1st molars ..	53	1.02	65	0.89	38	0.82
2nd ,, ..	56	1.55	62	1.47	35	1.26
Upper :						
1st molars ..	63	1.60	85	1.55	40	1.20
2nd ,, ..	68	1.69	91	1.77	50	1.65

* The term "hypoplasia" is used to cover all degrees of surface structural defects, from very slight to severe, of the type known as "M-hypoplasia."

It was desired to ascertain whether in these children any association existed between the quality of the structure of the teeth and the amount of caries present in them. Each individual tooth was considered in relation to the two conditions, and the resulting figures for all the teeth were arranged in the form of fourfold tables for incisors and canines together and for molars. Values for χ^2 and P were then obtained. It will be seen from Table II that all the values for P except one are less than 0.01 (the exception being 0.05 for molars at age 7), showing that such distributions would occur by chance less than once in 100 times (or 5 times in 100 for age 7 molars). A value of 0.05 is usually taken as the level of significance, all values of 0.05 or less indicating a real difference between observed values and such as might occur by chance. It is evident, therefore, that an association did exist in these children between the quality of the structure and the amount of dental caries—the better the structure the less the caries.

TABLE II.—*Association of Caries and Surface Structural Defects (M-hypoplasia) of Deciduous Teeth*

	Age 5 (34 Children)			Age 6 (55 Children)			Age 7 (32 Children)		
	χ^2	n	P	χ^2	n	P	χ^2	n	P
Incisors and canines	27.141	1	<0.01	58.181	1	<0.01	6.750	1	<0.01
1st and 2nd molars	24.450	1	<0.01	32.982	1	<0.01	4.532	1	0.05

Dental Caries and Nutrition

As already stated the chief point of interest in planning the main investigation was nutrition, and as it was desired to correlate the amount of dental caries present with the nutrition, it was necessary to assign a numerical value to both in every individual.

The difficulty in devising a value for the dental condition is that a figure based only on the teeth present in the mouth at the time of examination is obviously not truly representative of the dental condition of a child who has had a considerable number of teeth extracted for caries. Consider, for example, a child of 5 with only its non-carious incisors and canines left, all molars being missing: unless some allowance is made for the molars which will almost certainly have been extracted for caries at this age, the caries figure for this child will be exactly the same as that for one having a complete set of non-carious teeth. To overcome this difficulty, when assessing the caries *per mouth* it was assumed that in these children (aged 5 to 7 years) all canines and molars missing had been carious in the third grade, and adjustments were accordingly made in the caries figures. Incisors lost might have been carious, but at these ages they might have been shed normally, so no allowance could be made for them. (The age 5 group was the least affected by this consideration, most of the teeth being actually present in the mouth—see Table I—and age 7 the most affected; therefore, age 5 group would give the most satisfactory data.) The carious marks allotted to deciduous teeth in each mouth were added together, then divided by the total number of teeth; this gives an average caries figure which can be correlated with any other condition as required. (Deciduous teeth which were present in the mouth at the first inspection but were shed or extracted during the course of the year were nevertheless included when calculating the final average caries figures in order that the increase in caries might be assessed in the same number of teeth over the whole period.) No account was taken of any permanent teeth.

The assessment of nutrition is a subject on which there is little agreement from any point of view. Standards of good and bad nutrition vary from one clinician to another, and sometimes even for the same clinician variations may be found in the standards used over a period of time. Many factors are involved and much depends on the order in which children are seen, well-nourished ones tending to make less fit ones examined subsequently seem even worse than they probably are, and vice versa. In an effort to produce some standard less influenced by the personal factor, many indices of nutrition have been devised based on various physical measurements. R. Huws Jones (1938) described investigations carried out to test the value of a number of these indices in relation to clinical assessments of nutrition in the same children. It was found that a simple index based on weight/height agreed as closely as any of the more complicated indices with the clinical assessments; moreover, it did not show a greater variation from the latter than that which occurred in the clinical diagnoses of the same children made by different physicians.

In order, then, to obtain a numerical value to represent (however roughly) the state of nutrition in these children it was decided to use the formula:

$$100 \text{ weight in kg.} / \text{height in cm.}$$

Average caries figures and nutrition indices were calculated for the first inspection and again at the end of one year, as well as the differences in each over the whole period. The correlation coefficients obtained are shown in Table III.

TABLE III

	Age 5 (34 Children)	Age 6 (55 Children)	Age 7 (32 Children)
A.C.F. at 1st insp. with 100Wt./Ht. at 1st insp.	0.127 ± 0.169	-0.075 ± 0.135	0.154 ± 0.175
Increase in A.C.F. with 100Wt./Ht. at 1st insp.	0.059 ± 0.173	-0.106 ± 0.135	-0.195 ± 0.173
Increase in A.C.F. with 100Wt./Ht. at last insp.	-0.233 ± 0.165	-0.138 ± 0.135	-0.196 ± 0.173
Increase in A.C.F. with increase in 100 Wt./Ht.	-0.483 ± 0.136	-0.261 ± 0.129	0.028 ± 0.179

At age 5 there is a fairly high negative correlation (−0.483) between the increase in the average caries figure

and the increase in the nutrition figure; that is to say, the *greater* the increase in the nutrition index (indicative of improvement in nutrition) the *less* the increase in caries. At age 6 the same relation exists: the correlation figure is rather low (−0.261), but it is significant statistically, being more than twice its standard error. At age 7 no correlation was found between the two conditions, but, as explained, this group is not so satisfactory because many of the deciduous teeth were already shed.

No association existed between the amount of caries found at the first inspection and the weight/height index at that time. Again, when the increase in the average caries figures was correlated with the weight/height index at the first inspection and at the last, no association could be found between them at any age. This was perhaps to be expected, as these indices only give an indication of nutrition at the time when taken and are not necessarily representative of past physical conditions which may have helped to produce defective and carious teeth, whereas the difference found to occur in the nutrition indices over a period shows what change, if any, is taking place in the child's physique during that time and whether its increase in weight is keeping pace with its growth in stature. It is interesting, however, to note that eight out of the twelve correlation coefficients calculated are negative, showing that the trend is frequently in the same direction—i.e., the better the nutrition the less the onset and spread of caries.

Conclusion

To sum up, it has been shown that, owing to the fact that the nutrition of an individual may vary from time to time, it is extremely difficult to relate it to any other condition at any given period; the complete picture from birth onwards is required. With the knowledge now in our possession, however, it is possible to fit together some of the pieces in the dental picture. It has been shown conclusively in animals that good dental structure can be produced by dietary methods (Mellanby, 1929), and in the investigations carried out in Birmingham by the Dental Disease Committee of the Medical Research Council (1936) there were indications (nursery school) that the same was true for children. Good structure, making the teeth more resistant to disease, is, then, the first line of defence. Post-eruptive influences, though less strong, appear to provide secondary protection, but it is not known how they are exerted. In Birmingham (where the average age of the children was higher than in this series) it was shown that vitamin additions to the diet *before eruption* of the teeth had a definitely beneficial effect in reducing the amount of decay which developed, and also that these dietary additions, even when given after *full eruption*, tended to delay the onset and spread of caries in the permanent teeth. In extension of these findings the present survey would appear to suggest that even in children who have not received any special dietary treatment an improvement in general nutrition, as gauged by the weight/height index, is found in conjunction with increased resistance of the deciduous teeth to dental disease.

Summary

120 elementary school children were examined over a period of one year for dental caries and surface structural defects of the teeth. It was found that:

(1) The lower incisors and canines showed the best surface structure and the molars the worst, the upper incisors and canines being intermediate; the structurally soundest teeth are therefore those of which the greatest part is formed *in utero* before dietary deficiencies are normally felt by the child.

(2) A definite association existed between the quality of the structure of the teeth and the amount of caries present: the better the structure the greater the resistance to dental disease.

(3) An improvement in physical condition as judged by an increase in the nutrition (weight/height) index at ages 5 and 6 was found to be fairly strongly associated with a smaller increase in dental caries.

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ANAESTHESIA FOR MAJOR DENTAL SURGERY

AN ALTERNATIVE TO THE ENDOTRACHEAL METHOD

BY

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Pernasal endotracheal inhalation anaesthesia is now firmly established as a method of choice for major dental and oral surgery. It has, however, long been felt that in spite of the obvious advantages attached to the method the liability to trauma of the mouth and pharynx would make a simpler but equally satisfactory alternative desirable for major dental surgery. The oral surgeon expects his patient to be "well" soon after the operation is over, because both he and the public, with a certain amount of justification, do not regard the removal of an impacted wisdom tooth or a cosmetic dental operation, in an otherwise healthy person, sufficient reason for a convalescence of several days or more to recover from the effects of the anaesthesia or from the operations of the anaesthetist.

To obtain the minimum of post-anaesthetic sequelae the anaesthetist must avoid the deeper planes of anaesthesia—the first plane of the third stage is all that is necessary for this work; trauma to the mouth and pharynx; lipoid-soluble agents—nitrous-oxide–oxygen is still the most suitable one for the type of surgery involved.

Advantages and Disadvantages of Endotracheal Inhalation Anaesthesia

Before describing alternative methods the advantages and disadvantages of the endotracheal route will be briefly stated so that comparison may be made.

Advantages.—(1) A perfect airway is obtained which is not obstructed by altering the position of the head or by depression of the lower jaw. As a result the patient breathes quietly and without effort. (2) There is no danger of inspiration of blood, mucus, or operative debris, because the oral pharynx can be packed with gauze or an inflatable cuff round the tube can be used. (3) The mouth is left as a clear field for the surgeon to work in, with no anaesthetic apparatus to get in his way. (4) The anaesthetist is able to stand some distance away from the patient and still maintain efficient observation and control of the anaesthesia. (5) Post-operative vomiting is reduced, because if a lipoid-soluble agent has been used direct impregnation of the saliva during maintenance is reduced. (6) Air is easily excluded, enabling nitrous-oxide–oxygen to be used exclusively and without pressure.

Disadvantages.—(1) Under the light anaesthesia used for dental work considerable skill is necessary to pass the tubes blindly and without trauma into the trachea. (2) It is sometimes necessary to use ether or other lipoid-soluble agent to perform laryngoscopy if blind intubation is not successful. (3) There appears to be an increased liability to post-operative pulmonary complications (Dawkins, 1937). (4) The possibility of trauma to the mouth or throat (Gould, 1935; Clausen, 1932). From the patient's and also to a large extent from the surgeon's point of view the greatest disadvantage of the endotracheal method is the post-operative "sore throat" which sometimes results. Careful observation and questioning of 1,500 consecutive cases revealed that minor discomforts occurred more often than had been previously admitted. In all these cases great care had been taken to avoid rough handling, unclean tubes, dry gauze, and unnecessary instrumentation. In 15% the operation was outside the mouth (i.e., cases for which the operation *per se* could not be blamed). When carefully questioned on the day after operation nearly 10% of these patients complained of *some* symptom. This was usually trivial from a medical point of view, but was often distressing to the patient. The symptom was either "dryness of the back of the throat," "a tickling feeling over the soft palate," or definite soreness over the palate and back of the mouth. In some the symptoms were more severe, such as difficulty in swallowing and, in one case, hoarseness of voice. In all cases the symptoms cleared up in two or three days with simple palliative treatment or none at all. The cause of the faucial and palato-pharyngeal varieties of "sore throat" appeared to be abrasion of the mucous membrane by gauze packing or bruising by surgical instruments (retractors and suckers). The patient with the laryngitis was an adult whose operation for the removal of an impacted wisdom tooth lasted over two hours. Trauma, infection, or prolonged pressure of the catheter may have been the causal factor. Whatever precautions are taken it seems almost impossible to eliminate completely these "sore throats" in some cases.

Alternatives to the Endotracheal Method

To be satisfactory any alternative inhalation method must permit of the mouth or pharynx being efficiently packed. Nasal nitrous-oxide–oxygen can be used very successfully for dental operations lasting hours. Its disadvantages are: (1) The nose-piece is apt to get in the way of the surgeon, particularly in operations in the upper incisor region. (2) The pharynx cannot be packed, as the airway will be occluded, but packing can be placed around and under the tongue. This is efficient only if performed carefully and if a sucker is in use during the operation. (3) The surgeon must be gentle, so as not to disturb the nose-piece or pack. The method is thus unsuitable for the "heavy-handed" surgeon. (4) The method may be extravagant in gas, as pressures of 10 to 20 mm. Hg may have to be used in some cases to maintain nasal breathing. An intermittent-flow machine such as the McKesson is practically essential. (5) Full premedication must be used to obtain uniformly successful results. This is included as a disadvantage because, although I much favour nasal anaesthesia, many anaesthetists are chary of using the necessary premedication. (6) The airway is easily obstructed by the surgeon. Constant vigilance is necessary on the part of the anaesthetist, who usually has to support the lower jaw throughout the operation.

Nasopharyngeal Use of Nitrous Oxide and Oxygen

The use of pharyngeal tubes is not new. Silk (1919) described a nasal tube almost identical in size with those to be described later. His description of the method of its introduction can still be read with advantage. Silk intended his tube only as an alternative to an oral airway with an open-mask administration. Connell (1925) introduced nasopharyngeal *insufflation* of ether by twin nasal tubes, but the method is unsuitable for oral surgery as the pharynx cannot be packed. Pharyngeal *inhalation* anaesthesia with the pharynx packed was first described by Coburn (1921), who used a rubber tube covered with spiral wire and connected to a bag and expiratory valve. This tube was, however, passed through the mouth.

Nasopharyngeal inhalation of gas-and-oxygen has probably been used at some time or other by most anaesthetists. It has not been adopted as a routine procedure, and the following reasons may indicate some of the causes of dissatisfaction: (1) Usually only one nostril is intubated and air-leaks through the other are difficult to eliminate. (2) The diameter of the tubes used is usually too small to enable the patient to ventilate his lungs adequately. Nitrous-oxide–oxygen anaesthesia is difficult to maintain under these conditions without the use of pressure. (3) The tubes are usually too short, and are easily obstructed by the pack in the mouth or pharynx or by the position of the head. (4) The shortness of the tube makes an efficient pack almost impossible. (5) The use of ether becomes almost inevitable.

A technique has therefore been evolved in which two tubes of as large a bore as possible are passed, one through each nostril. The ends of these tubes lie just beyond the epiglottis and opposite the glottis. The tubes are then connected to a McKesson machine, and the pharynx or mouth is packed with gauze. A state of affairs is obtained which has the advantages of the endotracheal method without most of its disadvantages. The only causes of obstruction of the respiration, if the tubes are the correct length, are spasm of the glottis—a condition rarely seen with nitrous-oxide–oxygen anaesthesia—and depression of the jaw by the surgeon, which can usually be countered by the anaesthetist.

Description of Apparatus

Tubes.—By experiment and checking with laryngoscopic examination two average lengths were determined: for men, 6½ inches; for women, 5¾ inches. The tubing is that used for endotracheal work by Magill (the thin-walled variety) cut with a short bevel (45 degrees). The anaesthetist should be prepared to cut tubes for any individual patient. This will be particularly indicated in children and adolescents, for whom it is no use keeping standard lengths. The measuring is done by rapidly passing the lubricated tube through one nostril and listening at the open end. When the maximum tubular breathing is heard, but before the glottis is actually entered (a point

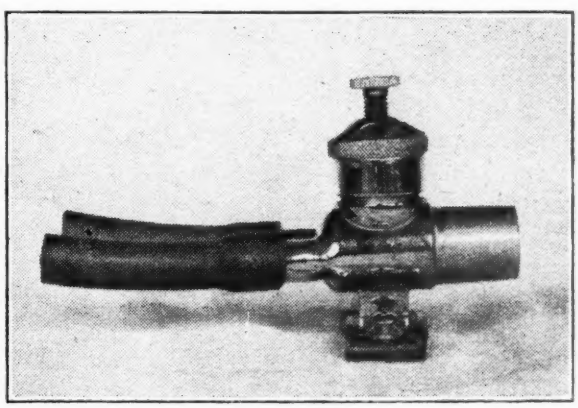

FIG. 1.—The apparatus.

easy to determine with practice), the tube is pinched close to the nostril, withdrawn, and cut.

Connexions.—Two right-angled Rowbotham connectors are used, one in each tube. The connexion to the McKesson machine is by a specially designed Y-piece which has the following features: (1) Each nasal arm is of wide bore (1 cm. internal diameter). (2) A plate covered with rubber to rest on the forehead. This keeps the nasal arms the correct distance away from the face and prevents marking the forehead by pressure of metal. (3) An expiratory valve incorporated in the Y-piece. This was suggested by Dr. de Caux, and avoids a multiplicity of small parts, making for simplicity in connecting up. (4) Two small studs for fastening the whole thing to the patient with an elastic band and avoiding the use of strapping. Fig. 1 shows the apparatus complete.

Technique

The patient is given the usual premedication (I use 2/3 grain of omnopon and 1/150 grain of scopolamine for a normal adult, with occasionally a small dose of evipan in bed). A number of tubes of suitable diameter and length are selected and placed ready, with their right-angled connexions inserted and their ends well lubricated with vaseline. Anaesthesia is induced with nitrous oxide, and when the patient is in deep third-stage anaesthesia the face-

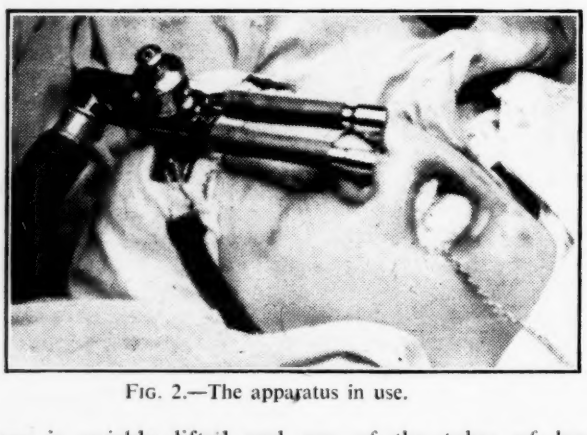

FIG. 2.—The apparatus in use.

piece is quickly lifted and one of the tubes of large diameter (8–10 Magill tube) is passed through whichever is the larger nostril. The tube should be inserted at right angles to the face and the point kept in contact with the floor and septal wall of the nasal fossa. The face-piece is replaced and the patient re-anaesthetized. The second tube is then inserted in like manner. As a rule the two sides of the nose differ in size, and a smaller tube will be used for the other side. The face-piece is discarded and the Y-piece connected up to the nasal tubes and to the McKesson machine (Fig. 2). The patient is now stabilized with oxygen, the pressure of the gases being increased, if necessary, to 10 to 15 mm. Hg to overcome air leakage through the mouth while the pack is inserted. As a rule the mouth can be easily opened at this stage, and the pharynx or mouth packed. If the jaw muscles remain tight secondary saturation may be performed or a little vinesthene added to the mixture. A dental prop should not be used from the start, because it will be found difficult to fit a face-piece over both the open mouth and the right-angled connectors protruding from the nostrils. The packing is of 2-inch ribbon gauze well wrung out in liquid paraffin. It should be carried back beyond the soft palate, so that air leakage does not take place round the tubes via the nares. As a rough guide the anaesthetist should pack in exactly the same way as for an endotracheal tube, but not quite so far back towards the glottis. An equally effective method, but one which is very often preferable, is to use a rectangular gamgee pad of about $3\frac{1}{2}$ by $4\frac{1}{2}$ inches, which is tucked around and under the tongue, reaching back to the fauces on each side. If this latter method is used a sucker is essential.

Results

Altogether 230 patients have been anaesthetized in this manner, the majority at the Royal Dental Hospital, for a variety of dental operations—mostly for impacted molars, dental cysts, and fractures of the mandible. From the surgeon's point of view they were all satisfactory, and in about half the cases he was not aware until after the operation that an endotracheal tube had not been used. Post-operative symptoms which could conceivably be due to the tubes were absent, except in two cases—in one there was an epistaxis twelve hours after operation, and in the other a "blocked nose" for two days. Both these might have been prevented by a more liberal use of vaseline on the tubes or perhaps by a little cocainization. In a few cases in which the jaws could not be opened easily a few breaths of vinyl ether overcame the difficulty. In no case was it necessary to use ether. With the exception of the two mentioned all the patients had completely recovered from the anaesthetic within twenty-four hours and were fit to go home if the local surgical condition allowed.

Contraindications

The method described above has its limitations. In my opinion it is not a satisfactory procedure in the following cases. (1) Large muscular men and patients with short fat necks: depression of the jaw by the surgeon easily obstructs the respiration, and holding the jaw forward to overcome this may be difficult or even impossible. (2) Children under the age of 5 years give better results with endotracheal anaesthesia. In one case adenoids were seen, through a laryngoscope, to obstruct the ends of the pharyngeal tubes. (3) If it is known or discovered that one or both sides of the nose are blocked an endotracheal method is indicated.

Summary of Conclusions

Although endotracheal anaesthesia has many advantages for major dental surgery the occurrence of post-operative sore throat in a number of cases should restrict its use to those in which it is indispensable.

Nasal gas-and-oxygen not being universally applicable, a nasopharyngeal method with the throat packed has been developed.

It has been satisfactory in use to both surgeon and anaesthetist.

It should not be used in patients in whom obstruction due to depression of the mandible is difficult to overcome or in young children.

My thanks are due to the honorary surgical staff of the Royal Dental Hospital for their patience and encouragement during the experimental stages of this study. The special Y-piece was made to my specification by Messrs. A. Charles King of 34, Devonshire Street, W.1.

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Among some sixty students from abroad who are taking courses at Leeds University are five from Poland, one from Greece, and five from Germany. Most of the ten students from the British Dominons and Colonies are studying medicine.

OPTIMUM CALCIUM REQUIREMENT

BY

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The serum of a normal adult is generally considered to contain 9 to 11.5 mg. of calcium per 100 c.cm. Table I gives the calcium determinations of 51 cases taken at random. The blood was examined soon after admission to the Liverpool Heart Hospital. We had no knowledge of the diet calcium of these patients. It will be seen that only in 4 cases out of 51 was the serum calcium below 9 mg.

TABLE I.—*Serum Calcium*

No.	Serum Ca mg./100 c.cm.	No.	Serum Ca mg./100 c.cm.	No.	Serum Ca mg./100 c.cm.	No.	Serum Ca mg./100 c.cm.	No.	Serum Ca mg./100 c.cm.
1	10.1	11	9.2	21	9.0	31	10.0	41	9.7
2	10.3	12	8.4	22	9.3	32	11.7	42	11.2
3	9.4	13	9.0	23	10.4	33	10.5	43	10.1
4	10.4	14	9.1	24	11.6	34	11.0	44	10.4
5	10.1	15	8.4	25	10.2	35	9.8	45	10.6
6	10.0	16	9.6	26	9.5	36	10.1	46	11.5
7	12.0	17	9.8	27	10.4	37	11.7	47	11.3
8	12.9	18	10.5	28	9.5	38	10.8	48	11.9
9	11.6	19	9.1	29	10.5	39	11.0	49	10.9
10	8.0	20	8.4	30	9.2	40	11.0	50	12.0
								51	10.4

The question arises how far calcium intake in diet influences serum calcium. In one patient who was kept for fourteen days on a diet containing 1.6 grammes of calcium daily the serum calcium rose from 12.9 to 13.6 mg. and fell below 10 mg. when the calcium intake was reduced to 0.7 gramme a day. But such results are by no means constant. In a good many of our cases a low calcium intake did not lower the level of serum calcium appreciably; for instance, in one patient having a calcium intake of 2 grammes daily for two weeks the serum calcium was 11.6, 10, and 10 mg. in three different determinations. With a calcium intake of 0.26 gramme daily for a fortnight the calcium serum figures were 11.2, 10.4, and 9.5 mg.; although during this period the patient had a negative calcium balance, the output being larger than the intake. While there is a noticeable tendency for serum calcium to fall with low and to rise with high calcium intake, it is clear that serum calcium values are to a great extent independent of the intake. Serum calcium values by themselves can hardly be utilized as a criterion of an insufficient calcium intake.

Calcium Balances

In our experiments patients were put for a period of fourteen days on high and low calcium intake, all other factors, including the nitrogen intake, remaining the same so far as possible. Between the two periods the patients were kept for some time on a normal diet. With an intake of 0.247 gramme the total output of calcium (Table II) was 0.415 gramme. It increased under an intake of 0.349 gramme, and still more so under 0.39 gramme intake. It will be seen that although with 0.39 of a gramme intake of calcium in the diet the intake is still less than the output, the latter is in this instance greater than when the calcium intake was 0.247 gramme. The same applies

TABLE II.—*Percentage Output of Calcium on Various Intakes*

No.	Daily Intake (gm.)	Daily Output			Percentage of Output in Relation to Intake	Daily N Intake (gm.)	No. of Cases
		Urine	Faeces	Total			
1	0.247	0.292	0.123	0.415	168.2	5	4
2	0.349	0.264	0.165	0.429	124.0	10	6
3	0.390	0.368	0.142	0.510	130.3	10	13
4	0.579	0.338	0.132	0.470	83.0	10	6
5	0.824	0.405	0.154	0.559	68.1	25	8
6	1.791	0.623	0.409	1.032	65.0	10	13
7	1.990	0.315	0.282	0.597	30.0	5	4
8	2.566	0.460	0.371	0.831	35.2	25	8
9	2.712	0.442	0.290	0.732	27.0	25	6

when comparison is made between the first and second series of cases. These figures suggest that when the calcium intake is low the calcium requirement values become reduced, for in the first series of cases an intake of 0.415 gramme would make good the calcium loss, whilst in the second series of cases it would require 0.429 gramme to balance the calcium output.

Starting with the fourth series of cases we find that the calcium output is greater in this series taken as a whole than in the first group of cases; but they differ from all the latter in so far as from now onwards the calcium intake is greater than the output. (The actual output in the fourth series of cases is slightly lower than in the third, but the difference is so slight that it does not really count, considering the large number of cases.)

We are now in a position to consider balances between calcium intake and output, particulars of which will be found in Table II under the heading "Percentage of Output." In the first three series of cases there is a negative balance, the output being greater than the intake. In all others the balance is positive, the intake being greater than the outgoings. There is a depletion of calcium in the first three series of cases and an accumulation of the substance in all the others. We may take it that the calcium intake covering optimum requirements is one with neither a negative nor a positive balance. Looking at Table II, this will be found between a calcium intake of 0.39 and 0.579 gramme. This figure agrees quite well with that of Sherman, Rose, and Rose (1920), who found the minimum calcium requirement to be 0.45 gramme a day for an adult. The minimum calcium requirement is probably lower than the figure given by these authors. In our first series of cases under an intake of 0.247 gramme the calcium output was 0.415 gramme, so that the latter amount would restore the equilibrium between income and expenditure. In our experiments on protein metabolism we found that a low protein intake, which at first resulted in a negative balance, if continued for a long period ultimately established an equilibrium. In this way we have obtained equilibria on very low protein intake. Very likely this applies also to calcium. Our experiments with a low calcium intake, however, did not last longer than two weeks.

Negative Calcium Balance

Calcium metabolism is very complicated, a considerable number of factors coming into play, and some of its features are still awaiting clarification. In the long run the organism cannot put out more calcium than it takes in. Ultimately some sort of equilibrium on a lower level of income will have to be established. In cases in which this does not take place a condition resembling osteomalacia must appear. The bones become soft owing to depletion of the calcium deposits. We do not know whether this condition is met with in England. In any case it is very rare. But, apart from this condition, we may be quite sure that ultimately some balance is estab-

lished between intake and output. One of us has made careful inquiries from a large number of patients attending the Heart Hospital in regard to the diet they are in the habit of taking at home. In no one instance was it found that the average calcium intake was below 0.45 gramme daily. In a good many instances the calcium intake was far above this figure—sometimes four or five times greater. Still more significant is the absence of evidence of any kind that adults (pregnant women excepted) suffer from the effects of calcium insufficiency. Rickets and tetany we may safely leave out of consideration. Sometimes in cases of nephritis the blood calcium tends to be low, but in this instance we may be sure it has nothing to do with an insufficient calcium intake. In some cases of malnutrition a low blood calcium is observable, but in these cases obviously it is not the calcium intake alone which is insufficient. One of us has been looking for years for cases of calcium insufficiency in an extensive hospital practice, and latterly in an institution where normal people are examined periodically, but not one case was found. The dental surgeon of the institution just mentioned makes *x*-ray examinations of the teeth as routine: he too was unable to draw attention to one case of calcium insufficiency. None of us remembers seeing a pathological specimen from an adult that exhibits a lesion in which calcium deficiency is a factor. Yet we are assured on the authority of no less a person than Sir John Orr that in about half of the population of this country the calcium intake is below requirements. In other words, every second person we meet is a victim of hypocalcaemia. Well, all we can say is that since this type of malnutrition gives rise to so few manifestations it cannot be such an undesirable state to be in.

Positive Calcium Balance

On a high calcium intake there is retention of this substance. We may be sure that the piling of calcium in the body cannot continue *ad infinitum*. With a positive balance the depots of the body are filled to overflowing. But, what is more important, we have definite evidence that in such circumstances tissue calcium is raised, including tissue calcium of the blood vessels. A number of rabbits have been kept by us on a diet rich in calcium, and here are the results of the analyses of two aortas.

	Diet	Calcium of Aorta
Rabbit 1	High calcium	16.2 mg./100 gm.
,, 2	,, ,,	16.9 ,, ,,
Control animal	Normal ,,	9.0 ,, ,,

After a certain level of accumulation of calcium is reached an equilibrium must be established between income and output. But the body calcium under such conditions will be higher all round than under a moderate calcium intake. Such is one effect resulting from excess of calcium intake.

Another aspect of high calcium diet is as follows. We have seen that with a high calcium diet calcium is retained; the total output is nevertheless larger under this condition than with a moderate calcium intake. Using the formula of Hill and Bancroft for estimating kidney work, which is

$$A = RT\left[\Sigma\left(C_u \log_e \frac{C_u}{C_b}\right) + \Sigma C_b - \Sigma C_u\right]$$

where C_u = molar concentration in urine of any constituent,
and C_b = ,, ,, ,, blood ,, ,,

we found in one case the work of the kidney—expressed as litre atmos./litre—to be 18.8 on a calcium intake which was only moderately high, whilst on a lower calcium intake it was 5.1. In another case on a calcium intake which was moderately high the figure was 14.0, whilst on a lower calcium intake it was 0.9. We found that calcium comes second only to protein as an important factor in kidney strain. Now it is an established fact (Harris, 1937) that if damaged kidneys are called upon to perform excessive work the blood pressure rises as an adaptation in order to help the kidney to get rid of the products of metabolism. It is evident that every gramme of calcium which is taken unnecessarily will raise the blood pressure in incipient and established cases of hypertony and in turn overstrain the heart, the blood vessels, and the kidney. It must with mathematical accuracy adversely affect the life of the victim.

We know that arteriosclerotic vessels contain more calcium than normal ones. Whether this is simply a secondary effect or whether the condition is helped along by an excessive calcium intake has not been established as yet. It is at present the fashion to disregard diet as a factor in this type of disease; but the above-mentioned findings in the aortas of rabbits fed on diet rich in calcium will take a great deal of explaining away. Long ago it was shown (Jacoby, 1916) that calcium "thickens" the kidney's filter and makes the performance of its function more difficult. According to the Registrar-General's returns, arteriosclerosis is more prevalent among the affluent classes—the people who are in the habit of taking food rich in calcium, and protein too. It is possible that the poorer classes are less prone to this disease because the calcium intake among other types of food is generally lower. It cannot be said that as yet the evidence conclusively establishes a relation between arteriosclerosis and nutrition, but the facts so far ascertained are highly suggestive.

Conclusion

It can be said that there is no particle of evidence which suggests that the vast majority of the population of this country are suffering from the effects of calcium insufficiency. Indeed, with a high degree of certainty it can be affirmed that the calcium intake under the present dietary regime is ample. On the other hand, a considerable amount of evidence exists that large sections of the population are in the habit of using too much of the type of food which is rich in calcium. There may be an indication for reducing the food calcium, but there is none at all for increasing it. Sir John Orr concedes that in half the population the calcium intake is satisfactory. Well, this half will be suffering from the effects of hypercalcaemia if the calcium content in our diet is raised.

We are indebted to Prof. Roaf for invaluable help and to Dr. Parrington, who is in charge of feeding experiments at the Institute, for the rabbit aortas referred to in the text.

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The following medical promotions in and appointments to the Venerable Order of the Hospital of St. John of Jerusalem were announced in the *London Gazette* of January 3: as Commanders (Brothers), Major-General N. M. Wilson, C.I.E., O.B.E., I.M.S., Colonel H. Stott, O.B.E., I.M.S.; as Officers (Brothers), Dr. J. R. S. Park, Colonel W. C. Paton, I.M.S., Dr. W. Steven, Sir C. S. Hicks, M.D., Dr. V. W. T. McGusty, O.B.E., Dr. R. B. MacGregor, Dr. N. Jennings; as Associate Officers (Brothers), Dr. P. Parthasarathy, Colonel P. B. Bharucha, O.B.E., D.S.O., I.M.S.; as Serving Brothers, Dr. W. Hughes, Dr. A. P. Gorham, Dr. J. A. L. Roberts, Dr. H. Mercer, Dr. W. L. Stewart, Dr. H. W. Miller, Dr. S. McClure, Dr. R. A. W. Procter, M.C., Colonel D. C. L. Orton, Dr. T. O'Brien, Dr. H. M. Mills, Dr. J. M. Morris, Dr. C. D. Wilson, Dr. H. H. Warren, Dr. R. R. Scott, C.M.G., M.C., Dr. N. Chilton; as Serving Sisters, Dr. Margaret Joyce, Dr. Elsie C. Hanson, Miss Hilda M. Lazarus, F.R.C.S., Dr. Mabel C. Freeston.

A CASE OF CEREBRAL CHOLESTEATOMA

BY

I. R. S. GORDON, M.B.

The following case seems to be unusual enough to merit description.

Case Report

The patient, a man aged 36, was admitted to hospital in March, 1940, complaining of headaches, attacks of giddiness, and a right-sided hemiplegia. He was quite well until 1933, when he began to suffer from attacks of giddiness, after which he could hear and see objects but was unable to understand what was said to him. These attacks continued to occur more often until in 1936 they recurred about once a month, and were associated with frequent headaches, both frontal and temporal. At this time there were no visual defects or loss of consciousness, his blood pressure was 125/90, and no abnormal physical signs were found. His headaches were controlled by 10 grains of aspirin. His case was diagnosed as petit mal. In 1937 he was admitted to hospital with a left-sided mastoiditis. A mastoidectomy was performed. After this his condition showed a temporary improvement, but in 1939 he began to deteriorate, and developed clumsiness, with progressive weakness of the right side of the face, the right arm, and the right leg. There was no visual defect or vomiting.

Examination.—On admission the findings were: Constricted pupils, equal, but reacting only sluggishly to light and accommodation; lack of expression and weakness over the whole of the right side of the face; slight deafness in the left ear; power and co-ordination defective in the right arm and leg as compared with the left side; tendon jerks in the right arm and leg exaggerated; right abdominal reflexes absent; plantar reflexes extensor on the right, flexor on the left, side; temperature 97.6° F.; pulse 80; the optic disks were both normal; forced grasping not present; speech normal; mental state normal apart from a slightly defective memory and some lack of a sense of proportion.

Investigations.—On lumbar puncture C.S.F. fluid, clear, colourless, and without clot, was obtained under a pressure of 190 mm. of water; cells, two lymphocytes per c.mm.; albumin 30 mg., sugar 40 mg., and chlorides 710 mg. per 100 c.cm. A blood count showed 5,900,000 red cells per c.mm., 112% haemoglobin (Haldane), and 8,000 white cells; the blood sedimentation rate was within normal limits. The Wassermann test gave a doubtful result, and the Meinicke reaction was negative. A radiograph of the skull showed no evidence of neoplasm; but a special radiograph of the mastoid processes revealed sharply defined translucent areas replacing the left mastoid air cells, with an adjacent sclerosis, suggesting post-operative translucency or possibly cholesteatoma; the right side was normal. An electro-encephalogram disclosed abnormal delta waves, frequency 2½ to 3 per second, accentuated by overbreathing—indicative of a slowly growing space-occupying lesion (neoplasm, abscess, or granuloma) localized to the left temporal region.

Course.—On April 8 and again on April 12 the old mastoidectomy wound was explored, and fluid was obtained from beneath the dura—20 c.cm. on the first occasion and 90 c.cm. on the second. This fluid was pale yellow and translucent, with flaky shimmering crystals. It was reported by the pathologist to contain numerous epithelial scales and cholesterol crystals but no pus cells or micro-organisms, and was described as similar to that obtained from a branchial cyst. Three days later the patient developed a pyrexia of 103° F., headache, neck rigidity, and a positive Kernig's sign. The cerebrospinal fluid was now turbid with numerous polymorphs, and Type I meningococci were grown. In spite of sulphapyridine therapy his condition slowly deteriorated, and he died on April 22.

Post-mortem Examination.—A necropsy was performed, and besides evidence of a diffuse purulent leptomeningitis, a tumour 8 cm. in diameter was found. This appeared to replace the left temporal lobe and a large portion of the left frontal lobe, to form part of the wall of the left lateral ventricle, and to compress the right temporal and frontal lobes. It was soft and friable, and appeared to be encapsulated in some parts, though it was difficult to say macroscopically whether the tumour compressed or invaded the brain tissue.

Microscopical examination revealed that the soft inner portion of the tumour consisted mainly of squamous epithelial cells and cholesterol crystals. From sections of the edge of the tumour it was seen that the boundary was a thin layer of stratified squamous epithelium. The zone external to this consisted of compressed nervous tissue and showed a heavy fibrillary gliosis with some thickening of the walls of the blood vessels.

Commentary

There seems little doubt that this tumour was a cholesteatoma, the histological report agreeing well with previous descriptions of this type of tumour, especially in the presence of an external limiting zone of stratified squamous epithelium. Unusual features are the large size of the tumour and the late development and mild character of the clinical manifestations.

It is generally thought that cholesteatomata arise from embryonic cell inclusions of an ectodermal origin, possibly in connexion with the branchial clefts. Some authors, however, have suggested that they arise—especially those of the middle ear—by metaplasia of the columnar epithelium of that cavity secondary to chronic inflammation (Critchley and Ferguson, 1928). In the latter connexion it is perhaps of interest that in this case mastoiditis was present, and the clinical history would seem to indicate an early involvement of the inner ear.

The situation in which the tumour was found accounts for the relatively slight clinical manifestions, in spite of the size and extent of the growth. The histological examination seems to show that the brain was grossly compressed rather than invaded by the tumour. The left frontal and temporal lobes are silent areas, and it is characteristic of a tumour in this position that the first localizing sign should be a right hemiplegia and should appear so late after the onset of the patient's illness.

Acknowledgment must be paid to Prof. Golla and Dr. Grey Walters for the preparation of the encephalogram and to Dr. R. M. Norman for the preparation and examination of the tumour sections.

REFERENCE

Critchley, M., and Ferguson, F. R. (1928). *Brain*, **51**, 334.

Skim-milk, perhaps because of a popular old advertisement, is a rather opprobrious term, and the prejudice against this product in America is such that according to the U.S. Department of Agriculture only about 12% of the skim-milk produced is used in the manufacture of dairy products. In a paper by Mr. J. S. Abbott at the sixty-ninth annual meeting of the American Public Health Association it was urged that the misuse of skim-milk constitutes an enormous economic waste. It contains all the essentials of whole milk except the milk fat and fat-soluble vitamins, and it even contains a certain amount of each of these, though not so much as whole milk. The Nutrition Committee of the League of Nations stated that, pint for pint, skim-milk contains more calcium, phosphorus, iron, and protein (though, of course, fewer calories) than whole milk, and is much cheaper. It is a good foodstuff for animals, but to feed it to pigs is unsound economics because it requires 10 pounds of the food nutrients in skim-milk to produce 1 pound of food nutrients in the form of pork. Industry and legislative effort to create a market for this wholesome foodstuff, says the author of the American paper, would be in the interest of consumers and dairy farmers alike, and there ought not to be any restrictions or discriminations against compounding skim-milk with other foodstuffs for use as human food in the manufacture of food products that supply a want of the people and that can be produced economically to advantage.

Clinical Memoranda

Benign Synovioma arising in a Bursa

The following case is rare enough to warrant publication.

CASE REPORT

A married woman aged 69 was admitted to St. Bartholomew's Hospital on March 3, 1939. Four years before admission she had fallen in the street and hurt her right knee. Fomentations were applied and she was confined to bed for six weeks. Six months later the medial side of her right knee had become swollen and inflamed, and what she described as a "wart" appeared in this situation. There was slight pain and the movements were only slightly impaired. At the Poplar Hospital the condition was diagnosed as an "infected wart with prepatellar bursitis." Fomentations were applied, and on one occasion the fluid was tapped, a few centimetres of blood-stained fluid being withdrawn. Haemolytic streptococci were grown from the fluid.

She attended the Poplar Hospital out-patient department for about three weeks. At this time the swelling had almost disappeared, but the "wart" remained. This slowly increased in size. After a while fluid reaccumulated, and the patient applied fomentations and kept the knee bandaged. She found that on applying pressure over the swelling fluid could be expressed through the "wart." If left for two or three days fluid would rapidly reaccumulate, resulting in a painful swelling in the centre of which the "wart" was situated. This swelling would go down on squeezing out the fluid.

On examination there was a fluctuating swelling about 3 in. by 2 in. situated over the medial condyle of the tibia medial to the tuberosity. It had the characteristics of a bursa, but did not correspond in position to any of the constant anatomical bursae. In the centre of the swelling there was an area about 7 mm. in diameter covered with a crust. On removing the crust a mass of closely packed papilliferous processes was seen, giving the surface a warty appearance. On pressing the swelling serous fluid exuded from this warty portion. All the fluid was expressed easily. A solid mass could then be felt under the skin. Pressure on this caused the papilliferous processes to bulge through the skin opening. Movements of the right knee were full and painless. There was no abnormal mobility and no crepitation on movement. No patellar tap was obtained. The glands in the groin were not enlarged. The patient was quite well in herself, and general medical examination revealed nothing of note. There had been no loss of weight. The family and past histories contained nothing relevant.

A radiograph of the right knee showed marked osteophytic formation on the tibia, femur, and patella. There was little evidence of erosion of cartilage. A small lateral incision was made on each side of the central warty area. Pressure then delivered a mass of peculiar papilliferous growth through the incision. This was removed and kept for section. A quantity of the same type of tissue was left behind. It appeared to extend towards the knee-joint. The skin incision was closed with silk. The section was reported on by Dr. Magnus. He stated: "Section shows a tumour consisting of sheets of cells which in some areas resemble fibroblasts and in others reticulum cells. Mitotic figures are spare. The tumour should be regarded as a primary tumour of synovial membrane—a synovioma. These are tumours which vary greatly in their degree of malignancy. This tumour looks relatively benign and shows no evidence of rapid growth."

The tumour was excised by Mr. Hosford under general anaesthesia. An elliptical incision was made around the affected area of the knee with a wide margin of tissue. The affected area was dissected out, together with fatty surrounding tissue. The lump showed no communication with the knee-joint. It was found to lie entirely in the subcutaneous tissue and measure about 2 in. by 1 in. by 1/2 in. The wound was closed in layers. The report on tissue removed ran as follows: "The specimen consists of a piece of skin bearing a sinus opening leading to a cavity lined by proliferative tissue. There is no macroscopic evidence of invasion of the surrounding tissues. Section shows the bursa to be lined by a transitional type of epithelium which in many areas is proliferating and shows evidence of locally infiltrating the surrounding tissue. The tumour would appear to be a type of synovioma arising from a bursa."

Fifteen months after the operation the wound was well healed and there was no sign of local recurrence or of secondary deposits. The patient was in excellent health.

COMMENTARY

There are few reports of tumours arising from synovial membrane in the literature, especially of this country. These tumours have special histological features. Modern work inclines to the view that synovial tissue is a tissue *sui generis*, and it is not surprising, therefore, that it can give rise to tumours which, though in the past not well recognized, are nevertheless distinctive. Such growths have been found in relation to joints, tendon sheaths, and bursae. Most of the tumours reported as arising from synovial membrane have been malignant. A detailed description of the histology of these growths, together with a proposed classification for the whole group, will be found in the excellent paper by Berger (1938). It also contains an admirable review of the relevant literature.

On both clinical and histological grounds the tumour here reported was considered innocent, and the subsequent history supports this view. However, it is important to insist that a patient from whom any type of synovioma has been removed should attend at intervals for follow-up, because even in the case of highly malignant synoviomas a history of from one to seven years' slow local growth is often obtained before any signs of malignancy have set in. The lungs are the commonest site for metastases.

I have to thank Mr. Hosford for permission to publish this case.

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At the recent council meeting of King Edward's Hospital Fund for London the Duke of Kent read a special message from His Majesty the King expressing His Majesty's admiration for the way the hospitals were carrying on under the present difficult conditions. The Duke went on to announce that the King's Fund was about to make a Christmas distribution of £300,000 to the London voluntary hospitals, which brought the total amount distributed by the Fund since its foundation in 1897 to over £10,000,000. Twenty-two additional hospitals would benefit from this year's distribution, as the King's Fund area had been extended to cover the whole of the Metropolitan Police District. Referring to the opening last April of the Nursing Recruitment Centre, which is concerned with propaganda on behalf of nursing in voluntary hospitals, the Duke said he knew that hospitals could be relied upon to co-operate with the centre by keeping it informed of their needs. There were in London so many hospitals that girls who wished to take up nursing were apt to be bewildered. They might apply to hospitals with long waiting lists and become discouraged, while there might be others which would be very glad to accept them. The Duke concluded by expressing his sympathy with the hospitals throughout the country which had suffered so severely in the war. The large number of hospitals that had been seriously damaged, he said, and the heroism and devotion of the staffs in protecting and rescuing the patients had profoundly stirred public feeling. The hospitals were as much dependent to-day as ever before upon voluntary contributions for the maintenance of their ordinary work, and he had no doubt that many people would desire to express their sympathy by giving them increased support.

Reviews

TREATMENT IN GENERAL PRACTICE

Treatment in General Practice: Surgery (continued). Articles republished from the *British Medical Journal*. Volume IV. (Pp. 562; 143 illustrations. 16s. net.) London: H. K. Lewis and Co., Ltd. 1940.

This volume continues an important series of articles which have appeared in the *British Medical Journal* over a long period; three volumes have already been published. The present book contains fifty-five articles on surgical conditions as widely varied as fracture of the forearm and rectal prolapse, and each gives a brief but clear picture of an important subject; throughout the whole volume a uniformly high standard is maintained.

There is a wide field of surgery which is the domain of neither the specialist nor the general practitioner but in which success depends on skilful co-operation between the two. Hitherto it has been a somewhat neglected field, and the *Journal* has done a very sound piece of work in calling attention to its existence and to its importance, which, at the present time, when the full health of every individual is vital to our country, can scarcely be exaggerated. It is well that the surgeon should realize that the effective repair of a fractured finger may be of far more significance to the State than the brilliant removal of a carcinoma of the rectum, and that the general practitioner should realize how much may depend on his management of a simple injury.

In *Treatment in General Practice* we have a series of pen-pictures of the most modern methods of treating common injuries and disabilities. Each article represents the considered experience of an expert in a particular field, and may be taken as an authoritative statement of the latest practice. Even those of us who are in the closest contact with surgical work and surgical teaching can scarcely read a single chapter without finding some new point of real value. For instance, the account of supraspinatus tendinitis opens up an entirely new view of injuries around the shoulder-joint, while the article on the treatment of haemorrhoids shows that careful attention to exact detail which reveals the expert. But every article throughout the book shows exact practical knowledge, and no one who wishes to keep abreast of modern surgical technique can afford to be without it.

H. S. SOUTTAR.

SEX AND REPRODUCTIVE PHYSIOLOGY

Recent Advances in Sex and Reproductive Physiology. By J. M. Robson, M.D., D.Sc.Leeds, F.R.S.Ed. With an introduction by Prof. F. A. E. Crew, M.D., D.Sc., F.R.S. Second edition. (Pp. 329; 62 illustrations. 15s.) London: J. and A. Churchill, Ltd. 1940.

During the six years that have elapsed since the first edition of this book was published the research work of the chemist has added much to our knowledge of sex hormones. Pure crystalline substances have been isolated, their structure analysed, and active synthetic forms prepared. One of the immediate results of this has been a great increase in the amount of certain of these substances, especially the oestrogens, available for clinical trial, and their effects have been tested in a variety of conditions. It is difficult to keep pace with progress in endocrinology, and for this reason the second edition of Dr. Robson's book, with its carefully and clearly summarized account of the subject, will be welcomed. New chapters dealing with the properties of the androgens, the chemistry of the gonadotrophic hormones, and the technique of hormone standardization have been added. Those sections devoted to the therapeutic uses of the hormones summarize the results obtained by numerous workers, but fail to discriminate adequately between the claims of individuals and the results of a more general clinical experience. In the same sections the use of the terms "anovular haemorrhage" and "metropathia haemorrhagica" as synonyms is incorrect and is likely to cause confusion, but it should not be difficult to remedy these defects in subsequent editions.

The illustrations are good, and an excellent summary of relevant literature is given. The book can be warmly recommended.

THE ART OF SURGERY

The Art of Surgery. A Textbook for Students and Practitioners. By H. S. Souttar, D.M., M.Ch.Oxon., F.R.C.S. Fourth edition. (In two volumes, pp. 402 and 377. 25s. net the two volumes.) London: William Heinemann (Medical Books) Ltd. 1940.

The production of a fourth edition of Mr. Souttar's textbook in two handy-sized volumes, printed in a clear modern type, makes this the most attractive issue that has yet appeared, while the thorough revision which the text has undergone in order to bring it up to date should make a wide appeal to medical students everywhere. Useful little black-and-white sketches, many of which were placed in the wide margin of previous editions, are now incorporated in the text and are the better for this rearrangement. We have always thought the title a happy one, being reminded of a remark of Wilfred Trotter's that medicine (which may be held to include surgery) is an art rather than a science—the suspension of judgment so essential in science cannot for long be maintained by a practitioner who would retain the confidence of his patient. Many will not agree with Mr. Souttar that division of the sensory trigeminal root is an operation of considerable danger, as in trained hands the mortality of this procedure is less than 1%; nor that a permanent cure of trigeminal neuralgia is obtained from alcohol injection of the ganglion, because many cases relapse in from six months to two years after successful injection.

But on the whole we can find little to criticize in the text, and have to congratulate the author on its essential soundness throughout and on the great improvement he has been able to effect on previous editions. This work is a safe guide for the student beginning surgery and entering the surgical wards, and will probably replace some of the older many-times-revised textbooks, whose original authors have long since died and whose present text, in the hands of followers, they would probably not recognize. Students using this textbook will be wisely and soundly inducted into the art of surgery.

CLINICAL PATHOLOGY OF EYE DISEASE

Introduction to Ophthalmology. By Peter C. Kronfeld, M.D. (Pp. 331. $3.50 post paid; or 19s.) Springfield and Baltimore: Charles C. Thomas; London: Baillière, Tindall and Cox. 1940.

Prof. C. Kronfeld's work, though intended for students, is not an elementary textbook but an attempt to formulate the principles of "that portion of ophthalmology which is a necessary part of basic medical education." The book is presented as a supplement to the short clinical course in ophthalmology that students have to undergo; it stresses pathogenesis and omits altogether details of diagnosis and treatment except in so far as they illustrate a general principle. Many common diseases find no place in this volume, as "they are unimportant for the exposition of ophthalmological principles." Within the

strict limits the author has imposed upon himself he has produced a readable and useful series of essays of interest to the specialist rather than to the student. Prof. Kronfeld has drawn widely on the basic sciences in his interpretation of such ophthalmological problems as cataract and glaucoma, and has ably summarized much recer work on anatomy and physiology in his chapters on the visual pathways and on the retinal circulation. With so much that is new and provocative it is a pity that the uniformity of the book is marred by digressions into elementary expositions and by some looseness in style. This work is really an attempt—the first of its kind—to produce a textbook on the clinical pathology of eye diseases, and it is regrettable that the author had not more clearly delineated the scope of his efforts and so avoided the pitfall of attempting to serve conflicting objectives. Incidentally, are English social titles so confusing that Sir Jonathan Hutchinson has to be recognized under the appellation of Sir Hutchinson? In spite of its defects the book is well worth perusal by ophthalmologists interested in the scientific aspects of their specialty.

Notes on Books

The association of tuberculosis, such a commonly chronic disease, with literary distinction and that rare gift, genius, has aroused a considerable amount of interest. It may be recalled that the late Sir Henry Head, in the Goulstonian Lectures in 1901 on "Certain Mental Changes that accompany Visceral Disease," dealt with this association and utilized his observations when house-physician at the Victoria Park (now the London) Chest Hospital. Dr. L. J. Moorman of the Oklahoma University School of Medicine, medical director of a private sanatorium for a quarter of a century and much interested in psychopathology, has in *Tuberculosis and Genius* (Cambridge University Press, 15s. net) now brought out an attractive volume on this subject. In an introduction he reviews the opinions of others, especially concerning the hypothetical stimulating action of a tuberculous poison on the brain, which may bring out a latent streak of genius. There may, however, be other mechanisms: for instance, the recognition that illness is a handicap and that life is shortened, which—art being long and time fleeting—induces a powerful compensatory effort at achievement. A list, admittedly incomplete, is given of more than eighty distinguished writers who were tuberculous, beginning with John Milton and including Samuel Johnson, who in early life was touched by Queen Anne for tuberculous glands in the neck. The remainder, and the greater part, of the book is devoted to ten separate analytical essays, each with a portrait—on Robert Louis Stevenson, Friedrich Schiller, Marie Bashkirtseff, Katherine Mansfield, Voltaire, Molière, Francis Thompson, P. B. Shelley, John Keats, and St. Francis of Assisi—with the object of showing the more evasive elements of personality as influenced by psychopathology, and how they become more tangible through the intimate presence of a chronic disease.

It is good to see that the war has not prevented the Medical Society of Individual Psychology from issuing its helpful pamphlets—helpful because they provide the general reader with straightforward accounts of medico-psychological problems that arise in the course of his daily practice. Pamphlet No. 22 (The C. W. Daniel Company, Ltd., 2s. 6d.) within forty-eight pages includes articles by Dr. A. Sandison, on escape and activities; Dr. R. Hargreaves, on the flight into normality; and Dr. H. Crichton-Miller, on discipline and leadership. The last article is by Dr. F. Marjory Edwards, on China under war conditions.

The appearance of a third edition of Dr. W. WILSON INGRAM'S small but comprehensive book, *The Diagnosis and Treatment of Diabetes* (Sydney and London: Angus and Robertson Ltd., 6s. 6d.) shows that it has established its usefulness in Australia. It is clearly and well written for the practitioner, who must find its clear directions, especially on diets, a relief in their dogmatism. The short new chapter on protamine-insulin treatment (the author calls it "modified" insulin) is the best in the book, and gives the practitioner real help by describing the significance of urine tests for sugar. The same is unfortunately not done with "unmodified" insulin, and this chapter contains only vague phrases about keeping the blood sugar normal. Surely, too, the reader—at least the English one—would find it easier if the terms "soluble" or "ordinary" insulin and protamine-insulin were used instead of "unmodified" and "modified" insulin. In the production of insulin all forms are modified from the pancreas elaborations and are liable to further modification as research produces new products. Such criticisms are minor, and the book is on the whole most helpful. The section on diagnosis, however, is confusing and should be rewritten. The blood-sugar curve on page 28 is described as mildly diabetic or else a lag-storage curve. It is typical of neither, and is so unusual that it is probably due to a technical error such as arises occasionally with the Maclean blood-sugar method, which the author recommends to practitioners.

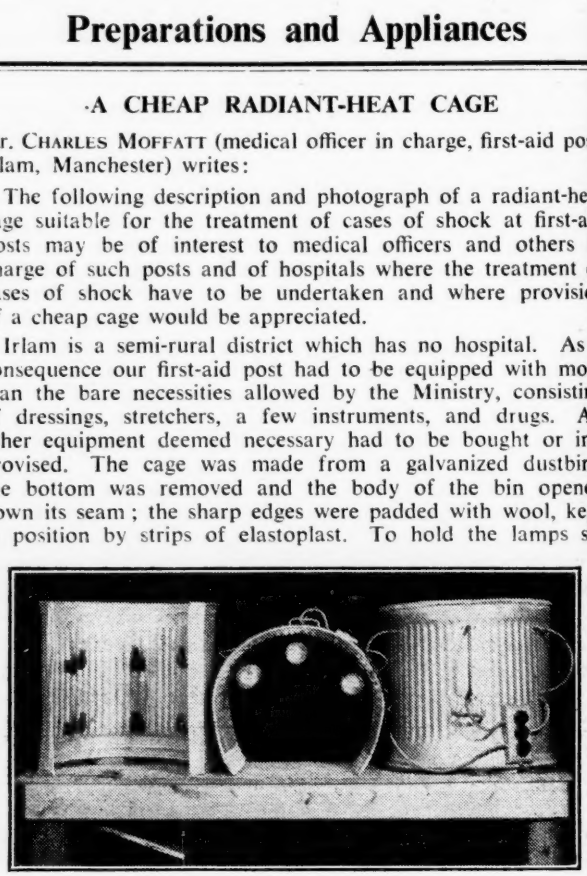
Preparations and Appliances

A CHEAP RADIANT-HEAT CAGE

Dr. CHARLES MOFFATT (medical officer in charge, first-aid post, Irlam, Manchester) writes:

The following description and photograph of a radiant-heat cage suitable for the treatment of cases of shock at first-aid posts may be of interest to medical officers and others in charge of such posts and of hospitals where the treatment of cases of shock have to be undertaken and where provision of a cheap cage would be appreciated.

Irlam is a semi-rural district which has no hospital. As a consequence our first-aid post had to be equipped with more than the bare necessities allowed by the Ministry, consisting of dressings, stretchers, a few instruments, and drugs. All other equipment deemed necessary had to be bought or improvised. The cage was made from a galvanized dustbin: the bottom was removed and the body of the bin opened down its seam; the sharp edges were padded with wool, kept in position by strips of elastoplast. To hold the lamps six



small wall brackets made of bakelite and bought from Woolworth's were fitted, three switches were also bought at Woolworth's, fixed to a wooden block, and fitted to the outside of the cage. The wiring of the switches, brackets, and plug was effected by using twin flex cable running through lengths of flexible gas-tubing: this was done to prevent fraying of the cable by blankets and rugs which would be thrown over the cage when used. The lights are wired in pairs, and can therefore be switched on in pairs, so that the amount of heat generated can be regulated. A three-core flex cable is used to connect up to the power plug; this carries the earth from the metal parts of the cage. The temperature can be checked by using an ordinary bath thermometer. As this cage is being employed for heating purposes and not for the treatment of fibrositic conditions, six 150-watt tungsten lamps are used instead of the carbon filament lamps usually fitted in a radiant-heat cage.

The post was fortunate in having as one of its members a plumber, who made the apparatus in a few hours at a cost of 35s. Should anyone wish for further particulars I shall be glad to supply them if the inquirer will write to me.

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THE TREATMENT OF CANCER

"Watchman, what of the night?" These were the words used by Sir Alfred Pearce Gould in his Bradshaw Lecture in 1910 when surveying the cancer problem. Now another Middlesex man, Sir Alfred Webb-Johnson, in his Bradshaw Lecture on "Pride and Prejudice in the Treatment of Cancer," published in last week's and the current issue of the *Journal*, bids us take heed of the watchman's answer: "The morning cometh, and also the night: if ye will enquire, enquire ye. . . ." Sir Alfred Webb-Johnson now gives us the answer to his inquiry into the problem of the treatment of cancer. It is an answer which is at once balanced, critical, and stimulating, and one which should give encouragement and hope both to the medical profession and to the victims of cancer. The treatment of malignant disease is dynamic and not static, but its evolutionary aspects tend to be obscured by day-to-day problems. Improvements in treatment are only possible when the results of long-term research can be reviewed and assessed. The latter part of the nineteenth century was the age of heroic surgery in the treatment of malignant disease, and of operations which are now often dismissed lightly as "mutilating." The first two decades of the present century saw the introduction of radiotherapy and the opening up of new and novel lines of treatment. During the two decades from 1920 to 1940 there has been a great extension of radiotherapy, and intensive study of its results, successes, failures, and mistakes, the introduction of systematic case-recording for research purposes, and, finally, the passing of the Cancer Act, with its provision for the setting up of regional centres for the treatment of malignant disease. The past two decades have also seen a great improvement in our knowledge of the natural history of malignant disease, of its pathological features, especially in relation to the histological method of grading tumours, and the introduction of newer diagnostic methods. All these advances have made for much greater scientific accuracy, and with it the clinical dogmatism of the Victorian surgeon has gradually disappeared. Meanwhile we have to face the everyday problem of the patient with malignant disease who requires urgent treatment. He or she must have the best that we can offer, yet the results of what we do to-day can only be fully evaluated in the course of five or ten years. The immediate problem and the long-term research are but the obverse and the reverse of the problem of the treatment of malignant disease. The present war, with its disorganization of population and hospitals, is an opportune moment to survey the results of the labours of the past twenty years.

But why "Pride and Prejudice in the Treatment of Cancer"? Here is Sir Alfred Webb-Johnson's answer: "When I embarked upon my inquiry I found an undercurrent of talk—wild uninformed criticism, a tendency to exaggeration of failures and overstatement of successes. Surgeons and radiotherapists were often in disagreement. There was indeed an atmosphere of 'pride and prejudice.' . . ." The surgeon, knowing he could obtain certain results by operation, was not always interested in radiotherapy. The radiotherapist was often blind to the possibilities of surgery. All of us in this country were too parochial in our outlook, and too inclined to ignore or to dismiss the work of the man across the way, while turning to Vienna, Paris, New York, or Milwaukee as the true Mecca. But this challenge to surgery from radiotherapy has been accepted, and has proved an immense stimulus to the study of the treatment of malignant disease. During the past twenty years the practice of radiotherapy has grown and is still growing at a remarkable rate. Many mistakes have been made in the sphere of radiotherapy, many of the cancer statistics are useless for the purposes of scientific comparison, and methods of treatment are still far from uniform. "In fact, in a recent report of the Radium Commission it is stated that 110 different combinations had been distinguished for the tongue, 53 for the floor of the mouth, 86 for the breast, 56 for the lip, and 66 for the uterine cavity"—truly a bewildering variety.

In a recent paper Paterson[1] dealt very fully with the Ministry of Health publication by Sholto Mackenzie on "Cancer: An Inquiry into the Extent to which Patients receive Treatment." This report divided cases into three groups on the basis of the actual treatment they received. The first, or "curable," group (or potentially so) included the uterus, skin, breast, and buccal cavity; the second, or "treatable," group the stomach, intestine, prostate, rectum, bladder, ovary, larynx, and miscellaneous; the third, or untreatable, group the liver, pancreas, lung and bronchus, gall-bladder, mediastinum, and oesophagus. In the first group the percentage of treated cases varied from 56% to 71%, in the second group from 5% to 42%, and in the third group from 0% to 21%. Treatment is thus likely to be carried out most often if the malignant process is in the uterus, including body, cervix, and vagina; the skin, including genitalia; the breast; or the buccal cavity.

In his survey Sir Alfred compares the results of surgery with those of radiotherapy under the conditions which justify such a comparison. In the case of the skin, although radiotherapy will cure a large proportion of cases, surgical excision is still the method of choice if disfigurement and mutilation can be avoided. The results of radiotherapy in the treatment of cancer of the lip are as good as or better than those of surgery, and these are often achieved without loss of substance. In the case of the tongue the results of radiotherapy closely approximate to those obtained by Butlin, but in view of the mutilation and disability resulting from extensive operations radiotherapy is considered the method of choice for dealing with the primary lesion. The results of the treatment of intrinsic cancer of the larynx by laryngofissure and by irradiation are identical, though only a small group treated by the Finzi-

[1] *British Medical Journal*, 1939, **2**, 904.

Harmer technique are available for study. Malignant disease of the oesophagus is still a problem to both surgeons and radiotherapists, and although surgery can claim a few brilliant successes, there have been as yet no lasting cures in cases treated by irradiation. In the case of rectal carcinoma Miles was able to obtain a five-year cure rate of 83% in Stage A cases, but Gordon-Watson has shown that the results of radiotherapy were too uncertain to justify its use in operable cases. In the case of carcinoma of the cervix the results of irradiation are better than those of surgery, even of so experienced a surgeon as Bonney, whose results are not likely to be surpassed. For this reason radiotherapy, with the greater uniformity in its application, is likely to be of much greater value than mass surgery. Finally, in the case of cancer of the breast the comparison of the results of surgery and of radiotherapy is difficult. Gordon-Taylor has obtained a ten-year survival rate, in 84% of Stage I cases, but although Keynes and others have made many valuable contributions to technique, the absence of pathological data makes comparison of results difficult.

It is thus apparent that about half the patients suffering from cancer need some form of radiation therapy, that this work can only be undertaken under the most favourable institutional conditions, and that intensive research is required on every aspect of the cancer problem. At present only about a quarter of the cancer sufferers in this country receive the skilled attention they need and deserve. During the past twenty years the treatment of cancer has made real progress, but much still remains to be done. Radiotherapy has established itself as a valuable method, and the problem of cancer treatment must be viewed as a radio-surgical one. But radiotherapy also has other advantages. It offers to the fear-ridden patient an alternative to the knife, it offers a line of treatment in cases in which operation is contraindicated, and it offers the possibility of greater uniformity in application. Much will depend on the working out of the details of the Cancer Act, but whatever is done treatment and research must go hand in hand. In his review Sir Alfred has given great encouragement to the profession and to the victims of cancer, but he has also pointed out that, as in so many other spheres of medicine, adequate planning is essential if the best results are to be obtained. It is also suggested that there is a shortage of trained personnel, particularly of radiotherapists, for carrying out the proposed treatment at regional Cancer Centres. This may be true; but it is equally true that in this country there are hundreds of highly qualified men who could undergo the necessary training and carry the lamp of knowledge and research to all parts of the country. Before, however, the work and services of these men are made available to the community much "pride and prejudice" in hospital control, administration, and outlook must be broken down. There will be no lack of willing or able volunteers for "planned" medicine when it offers first-class facilities coupled with opportunities for research. One of the few wise remarks ever made by Gideon Harvey, physician to Charles II, comes to mind: "How few good surgeons there are to be found, may easily be judged by what is premised; yet it is very probable, there are more in England, than elsewhere."

HOSPITAL ADMINISTRATION IN THE LONDON COUNTY COUNCIL

It is now fifteen years since the Royal Commission on Lunacy and Mental Disorder reported. The tenor of its recommendations was that the lunacy code should be relaxed with a view to such approximation of the treatment of mental disorder to the treatment of physical ailments as may be consistent with the special safeguards indispensable when the liberty of the subject is infringed. In the new era of enlightenment of which the Royal Commission itself was a sign and a fulfilment the partition existing, both in the public mind and in administration, between physical and mental illness has grown thin. This is evidenced by the establishment of out-patient departments for mental diseases in general hospitals, the new understanding of the mental basis of many cases of physical disorder, and in other ways. The very change in terminology whereby the words "asylum" and "lunatic" have given place to "mental hospital" and "person of unsound mind" is in line with the increasingly humane and scientific care of the insane which has characterized the last century and especially the last twenty-five years.

There still remain, however, some things to be done, or some relics to be cleared away, before administrative procedure, which always lags behind public sentiment, can be said to reflect the new spirit as fully as it might do. Even under the London County Council, the largest and most progressive of hospital authorities, the mental hospitals are administered by a department separate from that of the medical officer of health. The reason for this is easily given. Three years after the report of the Commission presided over by Lord Macmillan, the Local Government Act of 1929 was passed, itself the result of an earlier Royal Commission which had reported first in 1925 and again in 1928. In London the passage of that Act was followed by the largest transference and co-ordination of hospitals in history. The whole of the services of the extinct boards of guardians and the powers and duties of the Metropolitan Asylums Board devolved upon the London County Council, whose medical staff, with Dr. (now Sir) Frederick Menzies at its head, had the task of adapting the large number of general and special hospitals which had been taken over and of bringing them up to the required standard. This was of its kind the largest health measure that any local authority had ever shouldered, and it was the magnitude of the task which caused the postponement of one other rather obvious piece of reconstruction whereby the mental hospitals and the institutions for mental defectives, now accommodating nearly 34,000 patients, would have come under the same administrative direction.

In the London County Council, therefore, there are two quite different departments both dealing with hospitals—one of them directed by the Hospitals and Medical Services Committee, with the medical officer of health as executive officer, and the other by the Mental Hospitals Committee, with its own administrative head. At the time of the transference, eleven years ago, there was much debate whether all the hospitals, including the mental hospitals, should not be grouped together in the one department, in harmony with the report of the Royal Commission on Lunacy; but it

was decided, after careful consideration, to reserve such incorporation until the immense amount of work involved in the transference had been completed, and the general and special hospitals had been thoroughly reorganized and built up into the first-class service that they now represent, an example to the entire municipal world. The burden of the task which the Act of 1929 placed upon the medical officer of health and his assistants was considered to be quite enough for the time being, but it was always understood that incorporation was only deferred, not abandoned. A special report was adopted by the Council at that time which, *inter alia,* charged the Mental Hospitals Committee with the exercise of the transferred functions relating to the care of persons suffering from mental infirmity or defect, but indicated that a clear dividing line between this field and that allocated to the Central Public Health Committee (now the Hospitals and Medical Services Committee) could not be drawn, and that the two would have to act in close co-operation. As time has proved, and as was only to be expected in view of the character of our local government service, the existence of two separate departments has not proved to be any serious detriment to the communal health which they both served. Mutual courtesy and regard for administrative convenience have compensated, so far as they could, for an intrinsic anomaly. The same is true, no doubt, in the sphere of national administration of the relations of the Ministry of Health and the Board of Control. At the same time goodwill cannot always be depended on, in county halls any more than elsewhere, and, even if it could, its existence is no excuse for perpetuating such an arrangement. It is felt by many who are interested in the government of London that the time is ripe for such an incorporation, and the recent retirement under the age limit of the chief officer of the Mental Hospitals Department, Mr. R. H. Curtis, after a long period of devoted service, offers the opportunity of merging the two departments into an administrative whole.

The advantages of fusion are obvious. It is as strange to have within the same authority two separate departments dealing with health, with separate officials, responsible to separate committees, and issuing separate reports, as it would be, say, in the sphere of education to have one department dealing with drill and games and an unrelated department dealing with book learning, or to have a fire brigade which attended all fires except those due to gas explosions, these being dealt with by another brigade quite separately officered. This desire for merging is no question of mere bigness for its own sake or the aggrandisement of officials. It is a question, first of all, of efficiency, of the pursuit of a consistent policy, of the ability to plan in a large way. Such a reform might avert delay in many cases, might promote economy in the purchase of equipment and supplies and prevent overlapping, and might even facilitate interchanges of staff between general and special hospitals on the one hand and mental hospitals on the other, to the advantage of the officers concerned. Whether the institutions are dealing with physical or with mental illness much the same abilities are required in the committees which shape policy and the staff who carry out instructions, except, of course, that in mental hospital work there are certain special considerations, legal and other, for which provision must always be made.

The London County Council now has the opportunity of making a departure which would not only facilitate its own internal work but would be an example to local authorities generally, and in line with —in a sense the completion of—the metamorphosis, which began a century ago, of asylums for detention into hospitals for treatment.

TOWARDS SOLVING THE SHELTER PROBLEM

It was announced last week that the Government has decided to make important administrative changes in connexion with the control of air-raid shelters. The Ministry of Home Security will remain responsible for the number, location, and construction of shelters, and the Ministry of Health for their management and for all matters concerning the health and comfort of those who use them. No doubt the Ministry of Home Security will take the advice of the medical staff of the Ministry of Health on such aspects of shelter construction as bear directly upon hygienic conditions. While policy will be directed by the two Ministries within their clearly defined spheres, administrative responsibility will devolve on Regional Commissioners, who, acting through local authorities, will be responsible for all matters relating to the construction and management of shelters. Alderman Charles W. Key, M.P., who set such a fine example in organizing civil defence in his own borough of Poplar, has been appointed Regional Commissioner for the London Civil Defence Region. In addition to the existing regional staff he will also have the help of seventeen other officers of the Ministry of Health. He proposes to appoint some well-qualified woman who will give her whole time to the study of the problems that affect women and children. The Ministry of Food will continue to be responsible for the supply of food to the canteens.

During the past weeks we have published in the *Journal* a survey of conditions in London shelters, and have noted how far the recommendations of Lord Horder's Committee have been carried out. The multiplicity of authorities and the existing disparity between the actions of local authorities led us to put forward a plea in the *Journals* of December 7 and 21 for unification of shelter control. The necessity for some such action was emphasized by the *Times* in its leading article of December 27, in which it was stated, "Central authority and responsibility ought to be concentrated in a single department endowed with the necessary powers and able to take and execute decisions with promptitude." The shelter problem is neither a local one to London nor a temporary one, and we may have to face another winter of war in which the cities of this country will be subjected to even more intense bombardment than they already experience. Although Ministerial responsibility in relation to shelters has been clearly defined and administrative action now lies in the hands of Regional Commissioners, vigilance will still be necessary and watch must be maintained against the dangers of complacency. Apart from measures to be taken against the risk of infection, the prime need is for the

establishment of reasonable hygienic conditions of living in the shelters. When these have been secured, not in some shelters but in all, an imaginative effort will be required to seize some good out of the evil predicament forced upon us by aerial bombardment. The shelter population, which needs must be drawn from the poorest sections of the community, may be taught those elements of hygiene which they neglect in times of peace, and be educated in measures of preventive medicine. One good alone is already being secured—namely, the widespread immunization of children against diphtheria, to which desirable end the Ministry of Health has given an energetic drive. The Central Council for Health Education, at the invitation of the Ministry, now has ready for distribution a health booklet for shelterers and a series of leaflets dealing with special problems. These have been written in simple direct language, and if there is sufficient indication that they are not without effect, then no doubt the Central Council will continue the work of educating the shelter population. Food has to be measured in terms of guns, ammunition, tanks, and planes, and the Ministry of Food will no doubt carry into the shelters the excellent work it has begun, through the medium of advertisements in the daily press and in other ways, in instructing the people what to eat.

In this small field alone—for only a small proportion of the population lives in the public shelters—the seeds of post-war reconstruction may be sown here and now.

BLOOD CHANGES IN VITRO

The storage of blood for transfusion has focused attention on the changes which occur in red cells surviving outside the body. Recent papers from the Army and the Medical Research Council Blood Transfusion Services[1 2] show that the majority of the erythrocytes remain viable for the purpose of transfusion for at least a fortnight after withdrawal from the donor, and that their chances of survival are improved by the addition of glucose to the citrate solution used as anticoagulant. Every clinical pathologist is now familiar with the morbid anatomical changes which occur in the red cells on storage. The cells become more spherical, with a diminished resistance to haemolysis by hypotonic saline, a decreased tendency to form rouleaux, and a consequent slowing in the speed of sedimentation. The war has made haemolysis and the pre-haemolytic changes in the red cells a matter of common interest, but they have been for many years the subject of intensive research, because they touch on some of the fundamental problems of physical chemistry and pathological physiology. The world of lyospheres and electrokinetic potentials in which these problems are discussed must remain closed to the general medical reader, though it is there that he must look for the final solution of these problems. More easily understood is a paper by Furchgott[3] on the transformation of mammalian red cells from disks to spheres, which occurs when a saline suspension of the cells is placed between a glass slide and cover-glass. This change is in part due to the alkalinity of the glass, but there is also evidence that the glass adsorbs out from the suspension a protein which protects the cells from sphering. This protective anti-sphering factor is contained by both serum and cells. Fahraeus,[4] on the other hand, has shown that when the erythrocytes and plasma are kept separate from each other, as after sedimentation, the haemolytic agent lysolecithin is formed in the plasma. The development of lysolecithin and the pre-haemolytic changes which are associated with its presence do not occur in life owing to the constant interaction at the erythrocyte-plasma interface, which maintains the two moieties of the blood in good health. Lysolecithin was first discovered in the study of the haemolytic action of snake venom, in which it is the all-important intermediary. Singer[5] has followed up the ideas of Fahraeus, and has prepared lysolecithin from normal animal or human serum, to use it as a means of testing red-cell fragility. The resistance of various types of erythrocytes to lysolecithin and to hypotonic salt solution does not by any means run parallel, and there appears to be an important difference between the spherocytes of congenital haemolytic jaundice, which are much less resistant to lysolecithin than normal red cells, and the spherocytes of various acquired and symptomatic types of haemolytic icterus, in which the lysolecithin fragility is normal although the saline fragility is altered. It would be interesting to see how far these ideas of Furchgott, Fahraeus, and Singer are applicable to the solution of the problems involved in the storage of blood for transfusion.

[1] Bushby, S. R. M., *et al.*: *Lancet*, 1940, **2**, 414, 417, 420.
[2] Dubash, J., *et al.*: *British Medical Journal*, 1940, **2**, 482.
[3] *J. exper. Biol.*, 1940, **17**, 30.
[4] *Lancet*, 1939, **2**, 630.

ADIE'S SYNDROME

The considerable literature that has grown up on the myotonic pupil since Adie, in an article in these columns ten years ago,[6] clearly brought out its association with loss of tendon reflexes has done much to clarify the clinical picture and but little to reveal the anatomical basis of the affection. It is now accepted that the light reflex is not absent but sluggish in the myotonic pupil, often not being revealed until the patient has first been kept in a dark room for a few minutes. In 80% of cases the pupillary disturbance is unilateral; the reaction to convergence, though more brisk than to light, is slow and, like the light reaction, is followed by slow dilatation of the pupil; and accommodation may be affected. In all this there is a marked contrast with the Argyll Robertson pupil, from which it also differs in occurring more often in women (80% of the patients are women), in being seen most frequently in the age group 20 to 30 years, and in responding normally to atropine. The associated loss of tendon reflexes is not always present or may be the only sign of what must be regarded as a systemic infection, as the pupillary changes may be absent. That Adie's syndrome may be a familial affection is seen from the cases observed by Dressler[7] which occurred in three sisters, while the fact that it has been reported in a variety of neurological affections has rather tended to confuse the clear-cut picture of an innocent lesion which Adie sought to establish. In recording six new cases of the syndrome Scheie[8] points out that in all of them one pupil became markedly constricted on the instillation of 2.5% solution of mecholyl, a stable choline substance (acetylbetamecholine chloride); fifty normal controls gave no such response. Drawing on the work of Loewi, Dale, and others on the chemical mechanism of the transmission of a nerve impulse from the nerve ending to the effector cell, and on the phenomenon of sensitization of effector cells when the nerve supply is interrupted on the post-ganglionic route, Scheie holds that the pupillary changes in Adie's syndrome are to be explained by a partial parasympathetic denerva-

[5] *Amer. J. med. Sci.*, 1940, **199**, 466.
[6] *British Medical Journal*, 1931, **1**, 928.
[7] *Klin. Wschr.*, 1937, **16**, 1013.
[8] *Arch. Ophthal.*; Chicago, 1940, **24**, 225.

tion peripheral to the ciliary ganglion. Such a view would explain the action of mecholyl and to some extent the pupillary anomalies, but does not fit in readily with the clinical observation that the syndrome is essentially a systemic affection. At all events the reaction to mecholyl constitutes a useful additional test for the myotonic pupil should this observation be confirmed.

JAUNDICE AFTER ARSPHENAMINE

Numerous theories of the cause of post-arsphenamine jaundice have been put forward, the most recent being that of Hanger and Gutman,[1] who found evidence in twelve cases that the icterus was probably due to the formation of bile thrombi in the finer biliary radicles. There can be little doubt that no one explanation covers all cases. Some workers think that the condition is the result of toxic action of arsphenamine on the liver cells, others that it is due to syphilis itself, and many consider that in most cases the jaundice is of the ordinary catarrhal type, either the drug or the disease acting, perhaps, as a predisposing cause. In the cases described by Hanger and Gutman the onset of the disease was usually acute, coming on some hours after the second or third injection. The jaundice appeared early, within a few days, and was remarkably persistent; the only symptom was pruritus. Laboratory tests indicated obstruction, and biopsies showed not only absence of damage to liver cells but evidence of pericholangitis and bile thrombi in the finer bile passages. It is not suggested that these changes are typical of a large proportion of all cases, but the condition appears to be a definite entity and one that has not been widely recognized. Correct diagnosis is important, as treatment should be directed to promoting drainage of the biliary tract rather than to the conservation of injured liver parenchyma. Such treatment, which consists of intravenous hypertonic dextrose and bile salt preparations, may save the patient from an exploratory laparotomy for suspected occlusion of the common bile duct. Further arsphenamine therapy is contraindicated.

THYROXINE AND MILK-FAT

Graham[2] found that after thyroidectomy the cow's yield of milk and milk-fat fell, though it was never reduced to zero. The administration of desiccated thyroid gland in the diet to either thyroidectomized or normal cows caused a rapid rise in the milk and milk-fat production, but after a few weeks the gradual decline in production set in which is normal during this period of the lactation cycle. The effect on milk-fat secretion was greater than that on the whole milk, hence the percentage of fat in the milk was increased. In the normal rise in milk secretion during the four to six weeks after parturition, thyroid feeding had no enhanced effect. Folley and White[3] showed that daily subcutaneous injections of thyroxine into normal cows in declining lactation caused large increases in milk secretion and in production of milk-fat and non-fatty solids, the latter being large enough to produce a greater concentration in the milk. The serum phosphatase was somewhat increased, but the milk phosphatase showed a sharp decline. There was no evidence that the phosphatase of the milk came from the blood. During the period of recovery from thyroxine injections the reverse effects were observed in the milk of the morning yield. Smith and Dastur[4] found that increases in milk yield of 28% to 50% began three to four days after the first injection, and lasted for a similar period after the injections were stopped. The amount of milk-fat secreted increased to such an extent that the percentage remained constant in the milk of one cow and rose slightly in the milk of three others. There was no change in the concentration of non-fatty solids, except a slight fall in that of the protein; neither was there any alteration of any importance in the actual nature of the milk-fat as evidenced by determinations of the Reichert-Meissl, Polenske, Krishner, iodine, and saponification values. There was, however, an increase of 10% to 26% in the concentration of sugar in the plasma, and a decrease of 10% to 20% in its main lipoid constituents. It is uncertain whether routine administration of thyroxine to increase milk yield will ever become practicable, but if it should it is useful to know that the treatment would have no deleterious effect on the concentration of the constituents or on the nature of the butter-fat.

[1] *J. Amer. med. Ass.*, 1940, **115**, 263.
[2] *J. Nutrit.*, 1934, **7**, 407.
[3] *Proc. roy. Soc.*, B, 1936, **120**, 346.

TRAFFIC IN OPIUM AND DANGEROUS DRUGS

The League of Nations Advisory Committee on Traffic in Opium and Other Dangerous Drugs, while urging the continuance of its work despite the war, has recently issued the completed report for the year 1938 of the returns received from the Governments which are parties to the several international opium conventions. The committee deplores that Iran, the Union of Soviet Socialist Republics, and Yugoslavia, great opium-producing and opium-exporting countries, failed to send in reports for 1938, and that Bolivia and Peru, great producers of coca leaves, were similarly in default. Various amendments in legislation and ordinances are reported from the 127 States, dependencies, and territories concerned. A noticeable amendment of the Dangerous Drugs Ordinance of 1935 in Hong Kong has been enacted in order to meet the enormous traffic in heroin there. Over 6,000 premises were visited during 1938 in this campaign; over 3,700 opium pipes, 5,900 heroin pipes, and 6,400 opium lamps were seized in opium and heroin divans, and 717 persons were deported after conviction for dangerous drugs offences. In accordance with what is known as "the six-year programme" licensed cultivation of opium in China should cease at the end of 1940. In Burma in 1938 the total revenue derived from opium was 44,20,535 rupees. In Germany and Hungary during the year the practice of extracting morphine from poppy straw was continued. In the former 520 kg. of morphine was derived from 193,000 kg. of poppy straw; in the latter 1,187,707 kg. of poppy straw was used, and the average quantity of morphine so derived was 900 grammes for 1,000 kg. of straw. The report includes the usual statistical tables showing for each country the production of raw opium and coca leaves, the manufacture of morphine, heroin, dionin, codeine, and cocaine, and of prepared opium for smoking, and the consumption, import, and export of the drugs in the several countries furnishing returns.

We regret to announce the death, on January 6, of Mr. Herbert Tilley, consulting surgeon to the ear and throat department of University College Hospital. We hope to publish a memoir in our next issue.

[4] *Biochem. J.*, 1940, **34**, 1093.

PRISONERS OF WAR IN BELGIUM AND OCCUPIED FRANCE

REPORT OF INTERNATIONAL RED CROSS DELEGATES

The International Red Cross at Geneva has appointed delegates to Germany and the territories it is occupying, also to Great Britain, Canada, Egypt, Greece, Italy, unoccupied France, and Kenya, to see that the terms of the international conventions are obeyed, to inspect prisoners of war and interned civilians in camps, and to act as liaison officers between the belligerent countries and Geneva. A representative has also been sent to Lisbon to supervise the passage of food parcels and clothing to prisoners of war. All the delegates are Swiss.

It is hoped shortly to receive explicit information regarding the health and dietary in the prison camps in Germany itself. The great difficulty is the extraordinary delay in communication with Geneva, amounting in some cases to six weeks. Meanwhile reports are to hand from the delegates to occupied France and Belgium, Dr. Marcel Junod and Dr. R. Marti. The reports from which we make the following extracts have been received by the British Red Cross and St. John War Organization in London from the International Red Cross. It appears that the treatment of prisoners—of airmen particularly—is satisfactory, all things considered, and that the British wounded in many cases are looked after by British doctors.

Dr. Junod was the first foreign representative to visit the several hospitals in Belgium and France where British wounded have been taken. At the Institut Bordet in Brussels he found seventeen private soldiers—all cases of open fracture, with osteitis and osteomyelitis—and reports that the treatment, under German specialists, was excellent and the food good, being the same as that of wounded Germans in the hospital. At the Hôpital Malines were seventy non-commissioned officers slightly wounded and three badly wounded. They were being cared for by two British doctors (Major Ralph Walter Ganderson [?Ralph Waldo Gunderson] and Major Donaldson Norman Stuart [?William Norman Stuart Donaldson]. Here again the medical care and the food were good. At the Military Hospital, No. 60, Ghent, there were 200 slightly wounded, twenty-nine more seriously, and seven not able to be moved; two British doctors were in charge (Major J. C. Steel) [?G. C. Steel] and Major H. R. Fosbery. Treatment was reported good and food sufficient. On their recovery and dispatch to German camps the men receive from the Belgian Red Cross a double set of underclothing. At the English Hospital in Enghien in Belgium there were 450 wounded, twenty-nine seriously. Here there was a large R.A.M.C. personnel—twenty-four officers, twenty-three non-commissioned officers, and eighty-three privates belonging to the Field Ambulance General Hospital 17/21. It is mentioned that the R.A.M.C. officers receive pay. The daily ration includes about 8½ oz. of bread, nearly 2 oz. of meat, and the same quantity of fats.

At two Paris hospitals, Hôpital Valdegrace and Hôpital Bejin, there were eighteen and fifty wounded respectively, and care, food, and treatment were good. At the Hôpital Ernemont at Rouen there were 123 wounded, of whom sixty were officers; fifty-nine were badly wounded. There were five British doctors at this hospital, the chief of whom was Major W. L. Kinnear, and twenty-four male nurses. Here again there was a good report as to care, food, and treatment.

The civil internment camp at St. Denis was also visited by Dr. Junod. Here 1,611 civilians were found in satisfactory living conditions. The morning ration included 1/2 oz. coffee and 1¼ oz. sugar; midday, vegetable soup and nearly 2 oz. meat; in the evening, coffee or sometimes tea, cheese, sausage, and about 2 oz. marmalade or 1 oz. butter. The Swiss Red Cross has sent a consignment of condensed milk for the aged and sick. There are seven British doctors and dentists in the camp, and there is a good hospital. Health and sanitation are satisfactory, and the equipment includes shower baths. The chief need of both the wounded and the interned seems to be soap.

Dr. Junod's assistant, Dr. Marti, has visited a number of camps for airmen prisoners. It is not certain where these camps are located, possibly in Germany itself. One of them consists of three wooden barracks, comfortable, heated, and protected against fire. The food is good, and the canteen sells fresh vegetables. The sanitation includes provision for hot showers, and there is plenty of space for exercise. In this camp there are 231 non-commissioned officers and fifty-seven privates. In another camp, where there are 126 officers and fourteen other ranks, the barracks are similar to the first, with comfortable rooms for two or four men. It is said that there are no complaints regarding food, and there is a well-stocked canteen. One hospital with a German doctor is shared by both these camps. At the time of inspection there were three airmen prisoners slightly ill. There had been no deaths.

Another camp for airmen, accommodating rather smaller numbers, consists of three large heated barracks, with rooms having one to three beds, and hot and cold water running. The food is good, similar to that of German officers at the camp, and there is a well-stocked canteen. In the hospital here there are twenty-three airmen, all nearly recovered except one badly burned and one wounded by bullet. One camp is divided into *Oberlager* and *Unterlager*, the former accommodating forty-four naval and forty-six army officers, with twenty-two other ranks, and the latter eighteen staff officers, 131 field officers, seventeen doctors, and forty-four other ranks. The food here is said to be plentiful and well chosen, giving 3,700 calories per day. Five officers wounded by bullets will be repatriated when possible.

INDIAN MEDICAL SERVICE

Recruitment of Emergency Commissioned Officers

In view of the expansion of the Indian Army the Government of India wish to recruit a considerable number of doctors in the United Kingdom for service as Emergency Commissioned officers in the Indian Medical Service for the duration of the war. The conditions of service of such officers have recently been revised, and the Government of India are now prepared to accept doctors up to 45 years of age for war service subject to their being considered suitable and physically fit for service in tropical countries. Emergency Commissioned Officers of the Indian Medical Service will be eligible for acting and temporary promotion above the rank of lieutenant appropriate to the duties which they are called upon to discharge, in the same way as officers of the R.A.M.C. Officers with specialist qualifications who are appointed to specialist posts will thus be eligible for acting rank appropriate to their duties. Pay will be at the same rates as for officers of the Indian Medical Service in peacetime, and passages to India at Government expense will be provided for officers but not for their families. Candidates will be required to attend at the India Office for interview and medical examination before being finally accepted for appointment. Those interested in the Indian Medical Service should address any inquiries to the Medical Adviser, India Office, S.W.1.

GAS DECONTAMINATION AT FIRST-AID POST

The Ministry of Health considers that the arrangements at many first-aid posts for the decontamination of gas casualties are inadequate and will be ineffective in action. Local authorities are therefore asked in a recent memorandum to review at once the facilities they have provided for this purpose. A plan, with details of the lay-out, of a model cleansing unit at a first-aid post accompanies the memorandum, and any new unit which it may be necessary to erect should conform to this model. Existing first-aid posts should be adapted so far as possible to provide the essential features of the model, which are as follows. Each unit should have four compartments: (1) an outside stripping shed, which should, of course, be above ground; (2) an inside undressing room; (3) a washing or shower room; (4) a dressing room. The object is to prevent the spread of gas vapour from the stripping shed onwards; the four compartments should therefore be sealed off from one another, and intercommunication effected through doorways covered with blankets, which should be wet when in use. Each compartment should have cross-ventilation. The memorandum concludes by pointing out that concentrations of gas may occur near first-aid posts, and that unless other suitable measures have been taken blankets should be placed in position on fixtures over all outer doorways, to be lowered immediately when necessary.

Correspondence

Medical Planning Commission

SIR,—The British Medical Association has indeed given its members a fine New Year's gift in announcing the formation of this body. It pleases me not only because it is our natural contribution to the national effort to show that "Britain carries on," but because it is an unmistakable sign that our Association is very much alive. A body which, while immersed in war work and with its working members and staff heavily strained, can plan for the future on this scale has every right to be proud of itself. This is the kind of initiative that we have a right to expect from the body which represents every class of our profession as no other body does. We shall follow the work of the Commission with great interest and the assurance that its composition guarantees zeal, competence, and comprehensiveness.

One point in your announcement particularly interests me—that is, the assurance that the visions and aspirations of the younger men and women will not be overlooked. I am the last man to undervalue experience, but there is always a risk that the minds of the older men, particularly when habitually immersed in medical politics, will become *polarized*. It is not easy for such men to get away from the ideas and technique of our "Proposals for a National Medical Service." But it must be done. The world has moved fast and far since these proposals were formulated. The Association has had a good deal of criticism from certain quarters, not altogether unmerited, for its lack of initiative in dealing with the shelter question and the Ministries in charge of it. I hope that this will receive the attention of the Commission and perhaps stimulate it to make an interim report on how to deal with a problem which is certainly a "wartime development" and which may have marked effects on "the country's medical services." Our Association has tackled many big things in its time. It never had anything more worthy of its steel than this.—I am, etc.,

Henley-on-Thames, Jan. 5. ALFRED COX.

R.M.B.F. Christmas Gifts

SIR,—It is with great pleasure that I inform you that we distributed £1,032 in Christmas gifts this year. This means a monetary gift to all our regular beneficiaries—deeply appreciated and valued by each one of them.

Will you please accept my warmest thanks for the help you gave in publishing my appeal and convey to your readers my sincere gratitude for their kindly and generous response.

I am sure that it is an encouragement to us all that the medical profession is so loyally supporting the Royal Medical Benevolent Fund and enabling the good work to be carried on at the present time, when the hardships of many are very great.—I am, etc.,

Royal Medical Benevolent Fund, 1, Balliol House, Manorfields, Putney, London, S.W.15, Jan. 1. THOS. BARLOW, President.

Tuberculosis and Shelters

SIR,—The issue of Circular 2231 of the Ministry of Health, which deals *inter alia* with the question of tuberculous persons frequenting shelters, compels me to return to some of the points raised in my letter published in your issue of November 2, 1940 (p. 608).

Naturally I welcome the fact that serious consideration is now being given to the danger to the general public. I regret, however, that in the accompanying letter from the Chief Medical Officer the danger to the patient appears to be considered chiefly from the angle of persuading him not to frequent public shelters and that the provision of satisfactory alternatives which will not be detrimental to his own or his family's health has received scant attention. To ask a tuberculous patient and family to use Anderson shelters is to court disaster only secondary in degree to the risk involved in the use of crowded public shelters. The conditions in an Anderson shelter, damp and badly ventilated, are conducive to cough, and the crowding of the family into such a confined space exposes susceptible persons to concentrated risk. Such a policy is directly contrary to all that the tuberculosis service has tried to achieve in recent years in the way of relative isolation of infectious cases, and I for one will take no part in it. It is unreasonable, on the other hand, even if an Anderson shelter were not harmful to the patient himself, to expect him or her to occupy it alone.

With regard to compulsory removal to hospital, I know that the London County Council is trying to increase its bed accommodation to meet the anticipated need, but at the present time it is often a matter of considerable difficulty to get hospital vacancies even for willing patients. Moreover, with the incessant propaganda about the supposedly deliberate bombing of hospitals and the undoubted fact that many of the hospitals are situated in vulnerable areas, it is becoming more difficult to persuade patients to enter hospitals at all willingly.

Tuberculous patients are human and are generally recognized to be more emotionally unstable than the average person. They want security as much as anyone else. The realist solution is to allocate or provide adequate relatively safe shelters for tuberculous patients which will be attractive enough to overcome the dislike of segregation. Otherwise there will be an increased tendency to the hiding of the disease, the conversion of the tuberculosis officer into a policeman, and the disappearance of patients from dispensary supervision.

In London, particularly in the City and surrounding boroughs, there is still a large number of relatively safe buildings not yet fully utilized where it would be possible to establish something in the nature of "night sanatoria," which would probably obviate the necessity for compulsory removal to hospital with its resultant congestion of beds and the confinement of ambulant patients for unlimited periods in wards which would become little more than prisons. The good will and co-operation of patients would be more easily secured if they felt that something was being done for them and the public would be more fully protected.—I am, etc.,

London, E.2, Dec. 30. C. K. CULLEN.

The Problem of the Shelters

SIR,—It appears that Mr. H. Mason (December 28, p. 917) does not realize that the two-stage or Haldane shelter, recommended by the A.R.P. Co-ordinating Committee, is not a "deep" shelter. As shown in the plans, it is a surface shelter, although it may be built below ground. Drainage should therefore present no difficulty. Mr. Mason may think that the adoption of this type of shelter would be disastrous; but it has been passed by the Ministry of Home Security as eligible for grant to local authorities. Also it is recommended by the Association of Architects, Surveyors, and Technical Assistants.

The shortage of labour and material mentioned by Mr. Mason provides a strong argument in favour of large communal shelters, since the larger the shelter the less is the material needed to provide a given standard of protection. A shelter in every home would provide many advantages; but the labour and material required to provide adequate protection would be prohibitive.—I am, etc.,

Jan. 2. J. R. MARRACK.

Convulsion Therapy in Out-patient Department

SIR,—Dr. E. Cunningham Dax's case (December 21, p. 878) against the treatment of out-patients by electrically induced convulsions is strongly supported by the following.

A spinster aged 46, described as a healthy person and as a popular and keen school-teacher before her present illness, became depressed after her mother's death in January, 1940. She lost weight, seemed apathetic, and reproached herself for imaginary neglectfulness and sins. When admitted to the Crichton Royal in May, 1940, she was agitated and sleepless. She constantly talked about her worthless and sinful life, blamed herself for her mother's death, and was sure that the police suspected and persecuted her. There were no physical findings except for a blood pressure of 166/90. Convulsion therapy seemed indicated because of the excellent results we had from it in similar cases of involutional melancholia. Between June 6 and 21 the patient received eight injections of triazol (azoman), six of which produced epileptic fits. The dose required for a complete reaction was 2 c.cm. of the 5% solution. There was some restlessness after the injections not followed by a fit; on three occasions the fit came on after a delay of some five to ten minutes. Nothing unusual was observed. After four fits the patient showed definite improvement; she seemed much more settled, conversed rationally, and was able to attend occupational therapy. Early in July she began to relapse. Delusions returned and were freely expressed; she made two suicidal attempts, and again became restless, although not to the extent she was on admission. The following four months brought no change. As the patient dreaded further injections, it was decided to apply electrically induced convulsions. Using the method and machine described by Fleming, Golla, and Walter (*Lancet*, 1939, **2**, 1353), she was treated with increasing doses on December 13, 16, and 18. Each day two attempts were made and none was followed by an immediate fit; but half an hour after the first treatment the patient, having meanwhile walked back to her wards, had a typical major fit while sitting at the fireside. Nothing happened after the two trials on December 16. On December 18 she had the maximum dose twice (duration 0.5 second, scale reading 100, resistance 550 and 450 ohms). A first fit occurred three hours and a second one approximately eighteen hours after the application of the electric current. On December 22 the blood pressure was 160/105.

This may be a unique observation; we have seen nothing similar among sixty patients treated by this method at the Crichton Royal up to the present. However, confusional states with or without aggressiveness and violence, exacerbations of depressive or manic episodes are not rare, and justify Dr. Dax's warning against the light-hearted application of the method. Much as I agree with this point of his letter, I cannot see why one should not make full use of the opportunity provided by convulsion therapy to teach students the differential diagnosis and treatment of the epileptic fit, so important in general practice.—I am, etc.,

Dumfries, Dec. 27. W. MAYER-GROSS.

Closed-plaster Treatment of Wounds

SIR,—The admirers of the genius of Prof. Rutherford Morison are indebted to Dr. Wm. McKenzie (December 28, p. 917) for his pertinacity in advocating the recognition of Morison's work. When home on leave during the last war I saw some of Morison's original bipp cases under treatment; these included patients with compound fractures who had lain out "in no-man's land" in Flanders from two to five days before treatment was initiated. The results of the treatment were remarkable; in fact they were startling. Morison claimed, and justly claimed, that he had discovered a new principle in surgery, where for the first time a septic wound could be successfully treated, sutured up without drainage, and remain undisturbed for several weeks. It is suggested that bipp only acts as a deodorant; such a statement is wholely incorrect. Morison claimed that the therapeutic effect of bipp was due to nitrous oxide liberated from the bismuth subnitrate, which acts upon the iodoform, thus liberating a constant flow of free iodine in the wound. And it was the constant action of this free iodine that had the beneficial effect.

That the bipp technique has not been more widely employed is entirely explained by the failure of those using it to carry out the technique correctly, as laid down by Morison. The surgeons who have not met with success were those who tried to improve on the procedure by washing out the wound with antiseptics of various kinds. Had these surgeons adhered to Morison's detailed technique of using a 1 in 20 solution of carbolic acid for the *outside* of the wound, and only allowing spirit. vini rect. *inside* the wound, how different would have been their results! To crab the method when the correct technique was not followed is so unfair; success can usually be assured if Morison's technique is followed without variation. The dispensing of the bipp is an important detail. The proper consistency of bipp is that it should be gritty when rubbed between finger and thumb. If too much paraffin is used the paste is too greasy; it will not adhere to a wound surface, so it cannot act; therefore bipp made up in a collapsible tube is useless. It should be stored in porcelain containers.

Morison always stressed the necessity for excising dead or damaged tissues as part of his technique, and that the bipp be rubbed into the tissues, any excess of the paste being removed before closure of the wound. All injured and treated limbs were fixed by firm bandages or by splints or by plaster-of-Paris. After my return home from the last war in 1919 I carried out Morison's technique in my emergency operations associated with sepsis at the Royal Victoria Infirmary, Newcastle-upon-Tyne, particularly in cases of appendix abscesses. During the operation the cut abdominal wall muscles were mopped with methylated spirit and scrubbed with bipp before the abscess was opened into, with wonderful results. After practising this method for six months I reverted to the old method in these cases. Two weeks later the sisters of my male and female wards jointly asked if I would resume the bipp treatment, for two reasons: (1) the less work entailed for dressings, which was once every two to three days in the bipp case compared with once every four to six hours in a non-bipped case; and (2) the lessened cost of dressings in the bipp cases. Further, every compound fracture since the same date has been treated by the bipp technique and the wound closed without drainage; in no single case have I had cause to regret the absence of a drain.

Prof. Morison discovered and practised a new principle in surgery, which included excising the damaged or dead tissue, closure of the wound without drainage, fixation of the damaged part, together with the application of an antiseptic paste from which comes a continual beneficent emanation of free iodine. I consider he was a pioneer in all these points and should not be deprived of the full credit for them.—I am, etc.,

Newcastle-upon-Tyne, Jan. 2. R. J. WILLAN.

SIR,—The application of the term "closed-plaster treatment" to the method associated with the name of Winnett Orr is unfortunate, as emphasizing, at the expense of fundamental principles, one detail of technique, and that a not universally satisfactory one. The undoubted success of the method depends on the application of these surgical principles: (1) excision of the wound in suitable cases, with removal of foreign bodies; (2) the establishment of free drainage, the wound being left widely open; (3) the avoidance of unsuitable antiseptics; (4) immobilization; and (5) avoidance of frequent dressings. The importance of immobilization can scarcely be over-estimated, but plaster is not always a wise method of fixation, especially if the circulation is in doubt. If a plaster is used it should not necessarily be of the closed type, notably if excision has been imperfect or skeletal traction has been applied.

The object of this letter is not to decry the use of plasters in general or of closed plasters in particular—far from it—but to condemn the implication in the term "closed-plaster treat-

ment" as applied to the present-day treatment of wounds. Unfortunately it has been observed that closed plasters are sometimes being used without thought of surgical principles.—I am, etc.,

Dec. 28, 1940. H. JACKSON BURROWS.

Hospital Infection of War Wounds

SIR,—I have read with particular interest Prof. A. A. Miles and his colleagues' interim report on hospital infection of war wounds (December 21 (p. 855) and 28, 1940 (p. 895)) and your leading article on the subject (p. 908). The open ward, housing a number of patients, favours cross-infection. This fact is well known to those in charge of fever hospitals. It has been found that the relapses of scarlet fever cases during the third to the sixth week are mainly due to a reinfection with a different serological type haemolytic streptococcus. These relapses can be prevented by an "aseptic" technique of nursing and the precaution of treating the patient in the cell of a chamber-ward. This type of ward is probably the ward of the future for both fever and surgical cases. The time has come when we should radically alter our conception of the design of hospital wards. The lesson which we are now re-learning should not be again lost when we start rebuilding our hospitals.—I am, etc.,

G. E. DONOVAN.

Gorseinon, Swansea, Dec. 30. Medical Officer of Health.

Sulphonamides in Treatment of Bacillary Dysentery

SIR,—Dr. J. Drummond's letter (September 14, p. 367) reminds me of a case I saw in July last which may be worth mentioning. The patient was an American negro in the City Hospital, Welfare Island, New York City, and when I saw him he had been there about ten weeks, I believe. He had dysentery with only about four or five motions a day, all containing blood and mucus, which no form of treatment did the slightest good to; *B. flexner* had been cultured from the stool. The most alarming feature, however, was a swinging temperature rising to 102° F. or 103° F. every day. He had had serum, salines, kaolin, intestinal "antiseptics," and many other forms of treatment. The doctor in charge of him, Dr. Greisman (I believe at the suggestion of the house-physician), decided that there could be no harm in trying sulphapyridine, and the patient was given 3 grammes a day. From the next day the temperature never rose again, and the dysentery stopped abruptly. The man was quite well a couple of weeks later, but I do not know the subsequent history.

I may mention that I have not been able to duplicate this happy result in this country. In fact, cases of bacillary dysentery to which I have given sulphapyridine and sulphanilamide have shown no improvement at all.—I am, etc.,

S. BETTENCOURT-GOMES.

Demerara, British Guiana, Nov. 23, 1940.

A Sound Wartime Dietary

SIR,—As the most wholesome, *complete* diet, known to have bred a race strong in brawn and brain, there is everything good to be said for the Scottish ploughman's "filling" fare of oatmeal made into porridge, brose, or bannock, broths in quantity containing any and every root and green vegetable, and potatoes cooked in several simple ways, commonly stoved with fat and onions, these washed down with a flagon of milk: a diet costing him exactly nothing in cash! On occasion he was known to allow himself the luxury of a red herring. On this diet Robert Burns, that prince among poets, was nurtured, and subsisted all his days.—I am, etc.,

Bournemouth, Jan. 1. S. WATSON SMITH.

Oranges and Tomatoes for Infants

SIR,—The present shortage of oranges creates a problem in infant nutrition. May I suggest that you make known through the Press, etc., how important it is that what oranges are available should, if possible, be reserved for babies.

The use of tomato juice as an alternative is not sufficiently known to mothers, although supplies of this, even in tinned form, are, I believe, limited; but the knowledge of this fact and the restricted use by the general public of oranges may save a number of wartime babies from nutritional deficiency diseases.—I am, etc.,

Reading, Dec. 27. W. IVOR BAIN.

The Shock of the Ambulance Journey

SIR,—Mr. D. G. Duff (November 9, p. 647) writes to say: "I am not certain that, even at this stage of the war, it is fully realized how shock-producing an ambulance journey may be." This fact was well recognized in the war of 1914–18, and has been ever since a part of the R.A.M.C. training. In the *Journal of the Royal Army Medical Corps* of last September I stated in this connexion: "All transport must be as smooth as possible. Smooth running can be helped by reducing the pressure of tyres over bumpy roads. The speed of the ambulance should vary according to the surface; bends and corners should be approached at a speed that will not cause swaying of the vehicle. Loading and unloading must be carried out as gently as possible, and the patient must never be submitted to sudden jars."

I have quoted this because from Mr. Duff's statement it is obvious that the present organization for distributing medical knowledge to all practitioners is not sufficient. No doctor takes all the medical journals, and in consequence a number of doctors never have the opportunity of getting to know about some new and important medical knowledge for a long while after it has become the common property of a few. In the meantime their patients fail to benefit from this new knowledge as quickly as they have a right to expect. This brings up the point that complete co-operation for the common good among the medical profession is not catered for at present. This could be altered if a committee was appointed to sift all new medical knowledge, and their findings be published in all medical journals.

At the moment, would it not be advisable to publish in all the journals an authoritative statement on the treatment of war casualties as it affects all doctors, and not from any one specialist's point of view? This should also include exactly what to teach as first aid, as it appears that in this connexion "a little learning is a dangerous thing."—I am, etc.,

R. R. G. ATKINS,

Dec. 3. Colonel, R.A.M.C.

The Methods of Statistics

SIR,—In times of national stress it is sometimes suggested that the medical profession ought to play a larger part in dealing with the nation's problems. It is easy to understand anyone taking this view, but less easy to see the part that individual members of the profession might be expected to play. It can hardly be doubted that a satisfactory solution of many of the nation's problems necessitates a great amount of preliminary research over wide fields, both medical and economic, and it is to be expected that in the post-war years the need for research will be greatly increased. In his fairly recent *Philosophy* Prof. H. Levy stresses the need for widespread research, and specifies a number of "social variables" requiring investigation in the interests of mankind.

Possibly the best contribution medical practitioners could make towards the solution of national problems would be to convince themselves of the urgent need for research, and to use their special opportunities to rouse the interest of others with a view to getting this carried out. Unfortunately statistical investigations often fail to interest those who have no knowledge of the method of statistics. A knowledge of these methods, on the other hand, often creates an interest in research. At present there is evidence of a desire on the part of the lay public to know something of the methods of statistics. At Glasgow a course of twelve lectures on the subject is open to the public, and no doubt similar courses for the public are being given elsewhere. In the medical profession, apart from those engaged in public health or in research, it can hardly be said as yet that a knowledge of these methods is widespread.

It is possible that the time will come when medical students will be required to have some knowledge of them as part of their educational equipment. A preliminary course of

instruction, given in association with the lectures in biology, would have some value in developing the critical faculties of the student. There are, perhaps, few of the later subjects in the medical curriculum which could not be revitalized to some extent and pruned of some unnecessary dogmatism by frequent reference to some of the concepts of statistical theory. It would be an advantage for the student to be introduced to the subject at a time when he has not yet begun to forget his mathematics. Once he has realized that he is acquiring an instrument that may be of service to him throughout his career, he may feel the urge to follow up the subject in the interesting and hitherto fruitful field of statistical mathematics. Here he may find beneficial mental discipline and, perhaps, aesthetic satisfactions. Others would at least learn enough perhaps to appreciate the advantages of taking a special course later. Even if the student should never have occasion to carry out a single statistical investigation of his own, his instruction in the methods will have been justified if he has been enabled thereby to take an interest in the researches of others, medical or otherwise, and to appreciate the implications of their results.—I am, etc.,

Paisley, Dec. 28. A. GARDNER.

Local Injections in Muscular Rheumatism

SIR,—I was very much interested in an article by Mr. Martin Button on local injection as a means of rapid restoration of function in muscular rheumatism (August 10, p. 183). For the last three months I have also treated by this method about twenty cases of lumbago, one case of sciatica, two cases of supraorbital neuralgia, and one case of severe muscular spasm of the flexor sublimis digitorum, with excellent and, as Mr. Button rightly says, surprisingly quick results. Instead, however, of using large quantities of novutox, as Mr. Button does, I have been able to get very good results by small injections of the oily preparation of Allen and Hanbury known as proctocaine. Of this I have never used more than 1½ c.cm., while in most cases I have used much less, the largest quantity being required in cases of lumbago.

In selecting the sites for injections in lumbago I have found Mr. Button's method the best. I generally ask patients as to the one position which brings on maximum pain on movement, and then mark out points of maximum tenderness on deep pressure (there are generally more than one); exact location of these is of great importance in getting the best results. Having obtained these, and with careful skin sterilization, I inject about 5 to 6 minims into the muscle substance with a needle, going at least half an inch deep vertically. At each of these tender points the process is repeated. Then the injected parts are well massaged and a collodion or benzoin dressing put on. The patient is then asked to get up and told to assume the position which gave him acute pain before the injection. His relief and surprise are extreme when he finds the pain almost gone. He is then made to do an exercise which in India is known as "oothbess," which is to sit on one's haunches and get up, doing that several times. Patients who come to the out-patient department walking with the greatest difficulty on sticks, doubled up with pain, have left walking straight without support after the injection. Of all the cases of lumbago on which I have tried this treatment I have not yet had a single failure. The injection itself is not at all painful, as Mr. Button finds with nuvotox, and that, I believe, is owing to the absence of adrenaline in proctocaine.

The two cases of supraorbital neuralgia were very bad cases. In one a young Mohammedan lad of 20 said: "For the last fifteen days I have night and day a pain in the right side above the eye, and about midnight I get it so intense that I am like a madman, waking up the whole house, allowing nobody to sleep." He was locally treated with heat diathermy, etc., but with no benefit, and analgesics and sedatives had no beneficial effects. After making sure that no frontal sinus or antrum infection was responsible for the pain, I injected only about 2 minims of the proctocaine solution as deep as I could go under the skin, obliquely with the needle pointing upwards and outwards just a little above the supraorbital notch. The part was then massaged. The next day he came quite relieved of his pain, having slept the first night peacefully. There was some swelling in the region of the injection and a slight puffiness of the upper lid; these all disappeared in two days, and he has not so far (after two months) had a relapse. Another case was of a similar nature and got immediate relief, but a month later there was a slight relapse, which, however, was controlled by soda salicylates in large doses.

The sciatica case, as Mr. Button terms it "pseudo-sciatica," was of two months' duration, and one injection of 1 c.cm. sufficed to relieve the pain. I have not yet tried so far the remedy in stiff neck cases nor in deltoid rheumatism, and was much interested in Mr. Button's experience of such cases.—I am, etc.,

Bombay, Nov. 11. N. H. VAKEEL.

"Egyptian Tummy"

SIR,—Dr. H. M. Stanley Turner (December 14, p. 850) rightly states that I ascribe this ailment to meteorological causes—that is, to a low relative humidity and active chilling of the body surface (December 7, p. 806). A similar ailment in Northern Egypt, he states, is due to a mild bacillary dysentery—usually the Flexner γ bacillus. I cannot state whether this bacillus was or was not present in any of my cases in Upper Egypt, as no bacteriological examination was ever made of the stools, as I always found that the treatment I have indicated cured and prevented these ailments in a short time provided that steps were taken to prevent the action of the climatic conditions to which I have drawn attention.

I will illustrate this by a case at Assuan of this ailment, treated at first by a colleague. The patient was a lady travelling with a friend, who acted as nurse. After some days' illness I was asked by them to come to see her; meeting my colleague, I informed him of this request. He said, "Do so by all means; it won't make any difference, as she will die in the night"; and the next day a consultant physician resident in Assuan told me he had taken a very serious view also of the case. I found the patient weak and in distress from very frequent stools, with mucus and blood. To my amazement she was lying in a thin nightdress, perspiring, on the bed; the cold north wind, entering by a window, passed across her body and out by an open south window. A warm Turkish towel was ordered to be fixed round the abdomen, and treatment and diet as suggested in my previous letter were instituted. She recovered completely, and I dined with her and her friend some eight to ten days later.

I still maintain the climate is the determining cause of the illness and its course.—I am, etc.,

Dec. 24. LEIGH CANNEY.

SIR,—From severe personal experience of "gippy tummy" in the early days of my service in Egypt I found that the condition arose as a result of nocturnal abdominal chill. In the Nile Valley and adjoining desert there are very great daily variations of temperature up to as much as 60° between the maximum and minimum in twenty-four hours.

After experimenting I found that the condition did not occur if I wore a cholera belt from sundown right through the night, and once I had made this discovery my troubles were over. I also persuaded a number of other sufferers to do the same, and I never found it necessary to order special diets, to give medicines, or to recommend removal from the climate of Egypt or the Sudan. The cholera belt can be improvised out of towelling, a scarf, or any other material that can be wound round the abdomen, and nothing else is needed to prevent this tiresome, "colicky," urgent intestinal upset. Natives often use their turbans to protect the abdomen at night.—I am, etc.,

Dec. 31. V. S. HODSON.

Euthanasia

SIR,—I do not suppose you would wish for much discussion of this problem at the present time. I feel, however, that the collective wisdom of experienced family doctors has never been sought. They alone have the practical and expert knowledge. I believe the majority of them would see little need for legalization, and could find many convincing arguments against it.

An inevitably fatal result can perhaps be diagnosed with reasonable certainty. Pain cannot be assessed by the doctor, but it can be relieved. Misery and the desire to be put out of it have little relation to actual pain; they are not constant from day to day, and are expressed many times without real inward conviction; they may be dispelled by a happy chat about old times. An invalid, like a child, may have the whole mental outlook influenced by those around. Discomfort, almost unbearable, is relieved by improved nursing. Mental distress may be a reflection from, or on, those who are in charge.

Pain in malignant disease may be severe, but in many cases this is not for very long periods; the case may drift on to a stage when there is much less pain but there is a desire for morphine. If the patient knows that reasonable dosage will be forthcoming at the right time, but understands the wisdom of spacing it out, there will not be so much evidence of apparent pain. It is true that this may leave a poor hopeless specimen being doctored and nursed, but both these professions gain something by rising to the occasion. They need not try to prolong a life that is coming to a natural end. If voluntary euthanasia were made legal, there is another side to the picture. A doctor dealing with an urgent, hopeless case might have less freedom with regard to dosage if some judicial authority were in the background, jealous of prerogative. The family doctor could recount some strange social complications—for example, in relation to re-marriage—and there may be legal responsibilities about the date of decease. Social and important economic problems are capable of being solved legally, but they might lead to social and mental ruin of someone left behind, who, with altruistic motives at the time, had acted on narrow, limited medical advice.

With regard to hospital cases the question of publicity and reputation is all-important. It is possible that one group of hospitals would decline to undertake the responsibility, and another group, who felt they were doing the right thing in giving the facility for euthanasia, might be placed in a difficult position in the matter of their good name for sympathetic nursing and their prestige. If practically all hospitals and most of the profession become more closely associated with the State, it might be unwise to bring forward legislation for a contingency which arises rarely and does not depend entirely on the natural history of the disease in question.

I am so convinced that the majority of good general practitioners would not countenance voluntary euthanasia that I believe many of them would feel compelled to set up some organization which bound them not to be associated with it, so that they would be protected from the many difficulties which they and their patients might otherwise fall in with if euthanasia were legalized. I believe that a wise patient who really understood would not subject his relatives or medical advisers to making a decision the responsibilities of which would live when he had passed away.—I am, etc.,

Derby, Dec. 27. HUGH BARBER.

SIR,—Dr. D. Kelleher (December 21, p. 880) suggests that the problem of the "incurable person in pain can be very simply overcome by the giving of morphine," and he goes on to argue from this that euthanasia is wrong. Surely this is not quite the way to look at it. The giving of ever-increasing doses of morphine becomes anything but simple, and the state of the morphine-poisoned patient is very pitiable. In the end the patient dies of morphine poisoning—a very barbarous form of euthanasia.

This matter is one of very great importance, not only for the patient with incurable painful disease but still more so in the case of idiot children. I feel, when I visit one of the homes where these little sufferers are boarded out, that their continued existence cries for action. I think there are very few people who would wish to prolong these lives if they could but see some of the cases.

It is because human life is so sacred that some people feel that no travesty of it should be allowed to continue. It is, admittedly, a very large and difficult question, but it is not too soon for the gravest thoughts and consideration to be given to it.—I am, etc.,

Hendon, N.W.4, Jan. 1. R. W. COCKSHUT.

[*** This correspondence is now closed.—ED., *B.M.J.*]

Adrenaline in Asthma

SIR,—I have read with interest Dr. George Krasner's letter (November 16, p. 684) on the treatment of adrenaline-resistant cases of status asthmaticus, and I note that a correspondent confirms that such cases occur. I have had such a case, which did not improve in the slightest under the method suggested by Sir Arthur Hurst, and in which, after warning the relatives of the dangers of morphine, the latter was used, and for a time the patient—apart from the asthma—was gravely ill as a result. Sir Arthur does not mention any failures with his regime, and one would be interested to hear whether he has anything to suggest, if he has had any.

Finally, Dr. Krasner mentions more than one method of treatment, so presumably, as is to be expected when asthma has different causes, none of these is infallible in any one case. It would be of general interest, no doubt, if Dr. Krasner could be invited to explain the following points: (1) Can the pathological conditions which cause the different types of status asthmaticus be diagnosed clinically from the history or examination? (2) If so, are any of the different methods of treatment applicable particularly to a particular pathological state? (3) Are there any other indications for the selection of the method of treatment, any contraindications, or anything noteworthy in the method of administration?—I am, etc.,

Edinburgh, Dec. 17. M. PARK.

Medical Examination of the Home Guard

SIR,—I have been surprised that there has been no medical examination of recruits for the Home Guard. We are told that the Home Guard is the second line of defence in the event of invasion, and, if so, it is reasonable to expect that our defenders shall be sufficiently fit physically and mentally to carry out their duties. At present, from my own experience in a country district, anyone volunteering for the Home Guard is accepted.—I am, etc.,

Llanfyllin, Dec. 18. L. J. FORMAN BULL.

Pathogenesis of Non-pulmonary Tuberculosis

SIR,—May I correct an error which inadvertently crept into my article on the "Pathogenesis of Non-pulmonary Tuberculosis" (November 16, p. 660), and refer also to two matters discussed by correspondents?

A follow-up report was obtained concerning eighty-one of 110 patients suffering from tuberculous cervical adenitis and twenty of forty patients suffering from tuberculous abdominal glands, a total of 101 follow-up reports, not eighty-one as stated. These follow-up reports were completed towards the end of 1938, and although they referred to patients discharged from several months to seven years before that date, no further development of disease in these patients has come to my notice during the ensuing two yeras.

Drs. F. A. H. Simmonds and Brian C. Thompson (November 30, p. 766) refer to Dr. Thompson's exhaustive and accurate study of 324 patients suffering from tuberculous adenitis, and quote it to refute my suggestion that "patients suffering from gross tuberculous adenitis do not under favourable conditions develop tuberculosis in other parts of the body." In his article, however, Dr. Thompson emphasizes the very unfavourable economic conditions prevailing in the area from which his cases were drawn. He adds that only 109 of his 324 patients were admitted to hospital or sanatorium for observation or treatment. The conditions, therefore, were very unfavourable. The distinction I wished to draw is easily demonstrable in a sanatorium in which both pulmonary and non-pulmonary tuberculosis are treated. Many children have been treated here for tuberculous adenitis during the past ten years; many young adults unfortunately are still being admitted suffering from phthisis, but none of these are the children whom we treated for tuberculous adenitis.

Dr. A. G. Auld's experience (December 7, p 808) of a patient whose pulmonary tuberculosis abated after the incursion of the complication of tuberculous lymphadenitis is interesting. I have looked through the register of more than 4,000 patients who have been admitted to this sanatorium during the past ten years, and found record of only one patient classed as

"T.B. + 11," who had a tuberculous cervical gland. I venture the opinion that Dr. Auld was right when he attributed significance to his case.—I am, etc.,

M. C. WILKINSON,
Medical Superintendent.

The Sanatorium, Black Notley, Braintree, Dec. 18.

Rationalization of the British Drug Industry

SIR,—Much can be said about the annotation entitled "Rationalization of the British Drug Industry" which appeared in your issue of December 21 (p. 875), and I would like to draw your attention to the following points.

Whatever may be said about the names adopted in the Addendum to the *B.P.*, they must be admitted as being reasonably terse and sufficiently indicative of the products to render them really useful, but if the medical profession has a preference for the original German titles we might well ask why they have not adopted them, as was the case with aspirin during the last war. Really the medical profession has not shown very much interest in the niceties of pharmaceutical nomenclature. For instance, those acquainted with hospital practice will know that some eight years of official recognition of posterior pituitary extract and neoarsphenamine has made no difference to the names used in the wards, or, for that matter, those taught in some medical schools.

One admits, of course, that there is a valid argument against the use of a proprietary title for an official drug, or even for any new substance discovered by research workers in a hospital or a university laboratory, and the only remedy would appear to be for such institutions to patent the results of their researches and control any commercialization that may follow, as has been done with insulin. But one need only to cite the instances of halibut-liver oil and the new remedy for epilepsy to show that our commercial laboratories are just as likely to be affected in this way as those institutions we have mentioned. The problem of chemotherapeutic research is not going to be solved by the efforts of the Medical Research Council alone without taking into consideration the activities of the commercial laboratories in this country, some of which have the advantage of being able to call upon the medical knowledge and research available in American scientific institutions.

Another reference in the annotation which should be commented upon is that which points out that "soon after the outbreak of war the Board of Trade decreed that every industry must organize itself for export trade. Despite all this, the British drug trade remains a complex of belligerent minor States." It concludes by saying that "some order of rationalization must be carried out. . . . People who do not make order by their own efforts may have a new order forced upon them." The industry is taking every possible advantage of the present circumstances in its organization for the export trade, but it should be borne in mind that it takes more than a year to counteract all the effects of unrestricted foreign competition. The economies of the Nazi export trade are well known, and it is hardly likely that such a regime would be tolerated in this country.

Much more could be said, but it seems to us that many of the points raised are governed by higher politics and are outside the range of discussion.—I am, etc.,

P. ROCHE,
Editor, *Retail Chemist*.

Dec. 31.

Lymphatic Circulation in Septic Inflammation

SIR,—Since Trueta and Barnes (July 13, 1940, p. 46) propounded the theory that the principal advantage of the closed-plaster method lay in the production of lymph stasis, it has been evident that this unusual evaluation of the lymph flow in septic infection could hardly go unchallenged. The letter from Mr. A. C. F. Halford (December 28, 1940, p. 918), together with your illuminating leader on the subject (December 7, 1940, p. 788), embolden me to suggest that the effect of the closed-plaster method on the lymphatic circulation must be totally different from that envisaged by Trueta and Barnes. In attempting to explain the result of hypertonic sodium sulphate applied to a wound (*Lancet*, 1940, **1**, 216) I suggested indeed exactly the opposite—namely, that one of the chief virtues of this treatment lay in the reduction of oedema and improved lymphatic circulation by the clearing of the lymph spaces and capillaries, resulting from the osmotic shrinkage of the endothelial cells. Now, no one who has heard Trueta lecture and seen the results of the closed-plaster method can fail to be impressed with the success of this treatment. How, then, can these opposing theories be reconciled?

The normal lymph flow along the lymphatics depends upon two factors: (*a*) *vis a tergo*, in the shape of pressure of lymph in the intercellular spaces; (*b*) alternate squeezing and expansion of the lymphatic vessels The latter depends upon two forces: (1) movements of neighbouring muscles; (2) pulsation of neighbouring arteries. In plaster fixation, with a limb wholly or partly enclosed in a rigid case, I suggest that the effect upon these factors will be as follows: (*a*) the *vis a tergo* is assisted, whatever the force with which the lymph is exuded from the blood capillaries; this force will be more directly conveyed to the lymphatic vessels in a closed space. (*b*) Although muscular movement is largely excluded the pulsation of the arteries will be communicated with special force to the lymphatics inside the plaster case.

Further, little attention seems to have been paid to the osmotic conditions obtaining inside a plaster case. Actually, we have a state of affairs in which any liquid exuded near the plaster is exposed to partial evaporation. The liquids to consider are lymph (or pus) and sweat (when uninjured skin is covered). Both these, when exposed to evaporation, must become of a much higher osmotic value than the cytoplasm of adjacent cells, so I further suggest that we have here a mild hypertonic type of treatment, with a consequent shrinkage of cells swollen by the action of bacterial toxins, and the clearing of the lymph channels previously described in connexion with hypertonic sodium sulphate. I therefore suggest that, far from causing stasis of the lymph, the closed-plaster method must have the opposite effect and promote a steady flow of lymph from the tissues similar to that promoted by the use of hypertonic sodium sulphate.

Wherein, then, lies the virtue of immobilization of an injured part, whether by plaster or otherwise? Here I suggest that we have tended to confuse flow of lymph with spread of live bacteria, and to regard the two as necessarily concomitant. As you justly point out in your leader, muscular movement and manipulation tend to damage already weakened lymphatic capillaries, and so spread infection. But in the absence of such movement the bacteria probably remain caught up locally in and among the tissue cells, and the steady flow of lymph into and out of the tissues is wholly beneficial. Hence any line of treatment which promotes the latter without causing the former is all to the good; and the advantages of the closed-plaster treatment of a whole limb, and of hypertonic sodium sulphate treatment directed to a wound, are explained.—I am, etc.,

York, Jan 2. J. C. LYTH.

Human Fertility

SIR.—Dr. John Pryde's contribution to the study of human fertility (January 4, p. 12) is of such general interest and importance that it must produce controversy, in spite of his wishes. Two practical points are concerned. First, if pregnancy is desired coitus should occur during the fertile period—namely, between the tenth and fifteenth days of the menstrual cycle. Secondly, if pregnancy is not desired can we with any degree of certainty advise our patients that it will not take place so long as they abstain from intercourse during this portion of the menstrual cycle—in other words, is abstinence during this time a certain contraceptive? Dr. Pryde's cases support his idea, but the following, the authenticity of which I can guarantee, do not.

Case 1.—Cycle regular 5/28; husband away for three months, returning on the twenty-sixth day of the cycle. Coitus took place that night; no period occurred two days later and pregnancy resulted. Friedman test positive three weeks later. In this case both parties were doctors and realized the importance of the information given.

Case 2.—Cycle 3–4/28–30. Married on sixth day of cycle, following a normal period. No coitus before marriage, husband called up to join the Army two days later. Pregnancy resulted.

These cases are not quoted to belittle Dr. Pryde's excellent article in any way, but further to stimulate investigation on this important problem in the manner suggested by him. As a result of such an investigation, carried out on a large number of cases, much valuable information may be obtained, among which may be found that many women, from the ovulation point of view, behave like rabbits.—I am, etc.,

Oxford, Jan. 6. J. D. FLEW.

Talipes Cavus

SIR,—Mr. W. Kent Hughes's article on talipes cavus (December 28, p. 902) was very interesting. I spent some time trying to understand his explanation of the clawing of toes in acquired pes cavus, but failed. He states that "clawing of the toes is attributed by some authors to paralysis of the interossei," and gives numerous points against this theory. Most authorities that I have heard on the subject believe that pes cavus may be due to paralysis or paresis of the lumbricales (not interossei). This explanation appeals to me as reasonable for two main reasons.

First, the deformity of the hand following an ulnar palsy is typical—the ring and little fingers are clawed whereas the index and middle fingers are not. Since the ulnar nerve supplies all the interossei, if Mr. Hughes's views were correct one would expect clawing of all the fingers. The lumbricales to the ring and little fingers are paralysed in an ulnar palsy, and the corresponding fingers are clawed. I think the condition in the foot is analogous. Secondly, the operative procedure based upon the theory that clawing of the toes is due to paresis of the lumbricales has been used successfully on many cases at the Wingfield Hospital, Oxford. The operative procedure is essentially a reconstruction of the lumbricales by suturing the long flexor to the long extensor of the toes. The flexor is usually brought up along the medial side of the proximal phalanx and sutured to the extensor expansion over the distal end of the proximal phalanx. As soon as the suturing is finished the clawed toe should be perfectly straight.—I am, etc.,

Luton, Dec. 30. L. W. PLEWES.

Indian Medical Department

SIR,—With reference to the correspondence on the above subject may I exercise the privilege of disagreeing with a portion of the editorial note (December 14, p. 850). Your closing sentence is misleading. An Indian military hospital is for Indian troops, while a British military hospital is for British troops. Both, of course, are Indian in the sense that they are for use in India or elsewhere under the C.-in-C., India. The personnel of both or either may be British or Indian (vide the case of the Bengalee in the R.A.M.C. and of the Europeans in the I.M.S.). The test of the correct designation of the military hospitals in India would be to address a letter to the "Indian Military Hospital" in Barrackpore, for instance, and it would *not* be delivered at the British Military Hospital.

The matter of the qualifications of the military assistant surgeon class in the I.M.D. and their registration on the British *Register* is one that calls for some "searching of the heart" on the part of the General Medical Council. All these medical gentlemen undergo a full curriculum in recognized Indian universities but are debarred from British registration. Last week it was announced that the Government were giving sympathetic consideration to the registration of ex-enemy aliens, while other aliens were already admissible to the *Register*. What about these British practitioners in the I.M.D.? While not wishing to name any prominent medical men now in Britain, I would state that there are quite a number who have "pitched their tents" in the British Isles, and on the strength of their studies in India have obtained degrees and diplomas ranging from Oxford to any one of the corporations one cares to name. Might I ask that retired officers of the I.M.D. be allowed registration (for the duration), so that their wide experience in medicine and army administration may be used at the present time. Some of them could usefully do A.R.P. or locumtenent work for men on Service, and at the conclusion of hostilities they would not remain in competition with the returned Service officers, especially as they already enjoy Army pensions. A gesture of this nature calls for moral courage, and I do not think the Briton of 1940 lacks this prerequisite.—I am, etc.,

St. Helens, Dec. 16. DONALD CAMPBELL.

SIR,—With reference to Sir Henry Gidney's letter about the Indian Medical Department and your comments on the phrase "Indian Military Hospitals" (December 14, p. 850), I feel that this phrase is apt to be very misleading, as it has apparently been so with you. I shall be glad if you will allow me to clear up this definition in your columns.

The military hospitals in India are divided into two separate groups. One deals with British troops only, and the hospitals are termed the "British Military Hospitals," to which the Assistant Surgeon Branch of the I.M.D. is attached for duty. The other group deals with Indian troops only, and the hospitals are termed the "Indian Military Hospitals," to which the Sub-Assistant-Surgeon Branch of the I.M.D. is attached. This branch is recruited from Indians only, who are given a medical school training only, whereas the Assistant Surgeon Branch is recruited from Europeans and Anglo-Indians who have a university training.—I am, etc.,

Maltby, Dec. 19. A. H. BARTLEY.

Universities and Colleges

UNIVERSITY OF OXFORD

B.M. and B.Ch. Examinations, 1941

The first examination for the degrees of B.M. and B.Ch. will be held on March 17, 19, 20, 21, 22, 24, and 25, and the second examination on March 31 and April 2, 3, and 4. Entries should reach the University Registry by 3 p.m. on February 22.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Lectures

The course of Hunterian Lectures for 1941 is arranged as follows: January 13, Prof. H. A. Harris, Growth in general; January 14, Prof. Harris, The anatomy and physiology of locomotion and posture; January 15, Prof. Harris, The inherent weakness of the human body with reference to orthopaedic practice; January 20, Mr. L. E. C. Norbury, Carcinoma of the rectum, with special reference to its pathology and treatment, based on a survey of cases at St. Mark's Hospital during the past ten years; January 22, Mr. Norman Capener, The lumbo-sacral joint: a discussion upon spondylolisthesis, scoliosis, and sciatica; January 24, Mr. R. E. Smith, The undescended testicle; January 27, Mr. H. A. Brittain, The principles of arthrodesis; January 29, Mr. J. M. Yoffey, The flow of lymph from the nasopharynx and the absorption of dyes, proteins, viruses, and bacteria after nasal instillation; January 31, Mr. W. H. Graham Jessop, The surgery of the great omentum; February 3, Mr. F. Ronald Edwards, Dried plasma: its preparation and administration for the syndrome of shock; February 10, Mr. F. F. Rundle, A study of the pathogenesis of thyrotoxicosis. On February 17 Dr. A. J. E. Cave will give the Arris and Gale Lectures on the comparative anatomy and evolution of the paranasal sinuses. All the above lectures begin at 3 p.m.

Prof. A. H. Burgess will deliver the Hunterian Oration on Thursday, February 13, at 2.30 p.m.

St. Thomas's Hospital Gazette has recently celebrated its Jubilee with the special issue for December, 1940. In spite of the war it still maintains the high standard of medical journalism it has always set before it, and the Jubilee number reproduces two photographs of the King and the Queen inspecting damage done to St. Thomas's Hospital during air raids on London.

Obituary

F. G. PROUDFOOT, M.D.

Consulting Obstetric Physician, Radcliffe Infirmary, Oxford

Dr. Frank Grégoire Proudfoot, who died on December 19, 1940, was born at St. Andrews on May 7, 1869, and was educated at Dumfries Academy and Madras College, St. Andrews, and at Edinburgh. He took his degree in Arts at St. Andrews in 1890 and graduated M.B., C.M. at Edinburgh in 1894, taking his M.D. of the latter university in 1910. After qualifying he was house-surgeon at the Royal Infirmary, Edinburgh, and later house-surgeon and house-physician at the Radcliffe Infirmary, Oxford, where he settled in private practice. Dr. Proudfoot was fortunate in his choice of Oxford at that particular period. The modern medical school was just beginning to make headway, having been stirred by the activity of Sir Henry Acland, and among Dr. Proudfoot's colleagues were Arthur Thomson and James Ritchie, both graduates of Edinburgh University. Dr. Proudfoot quickly established an extensive practice, and in due course became one of the best-known practitioners in Oxford and district. He early specialized in midwifery, and in 1920 had the satisfaction of witnessing the foundation of the Maternity Department of the Radcliffe Infirmary as a special unit. It is said that he paid the salary of the early house-physicians out of his own pocket. For many years he acted as honorary physician to the Maternity Department, and on his retirement was elected consulting physician there. Besides being consulting obstetrician to various local authorities, he was also examiner to the Central Midwives Board and to St. Andrews University in materia medica. In 1920 Dr. Proudfoot received the degree of M.A. (Oxon.), being the last of the Fellow commoners of Queen's College. In 1929 he was appointed honorary surgeon to H.M. King George V.

A keen officer of The Queen's Own Oxfordshire Hussars, Proudfoot served abroad during the war of 1914–18 as Major R.A.M.C. attached to this regiment. After being wounded in the second battle of Ypres he became O.C. 3rd Southern General Hospital and, later, A.D.M.S., 48th Division T.A., with the rank of colonel. At the outbreak of the present war he was chosen as the physician on the medical board for examining university and other candidates for commissions, and all who worked with him will testify to the happiness and good humour that pervaded the board. He had only recently taken on the presidency of No. 2 board in Oxford when it became obvious to his friends that he would not be spared to carry on.

In private life he was a most gracious host and a delightful companion. He was a fine judge of wine, and was perhaps at his best in the Common Room of his college after dinner. For many years he was a member of the Royal and Ancient Club of St. Andrews, and in his early days was a scratch golfer. Until only a short time before his death he would enjoy his round at Frilford Heath, where he had been captain. Dr. Proudfoot was a keen follower of university sports and was medical officer to the Oxford University Association Football Club and the Oxford University Boxing Club, as well as medical officer to the Oxford City Association Football Club. A lifelong Mason, he had the distinction of being a grand lodge officer and a past-master of the Churchill and Apollo Lodges. At the time of his death he was the Grand Superintendent of the Provincial Grand Chapter of Oxfordshire. When the British Medical Association met at Oxford in 1904 he was secretary of the Section of Obstetrics and Gynaecology, and at the meeting in 1936 he was vice-president of that section. Dr. Proudfoot leaves a widow and one son, who is serving as Lieut.-Commander in the Royal Navy. Those who have had the privilege of his friendship will miss his cheerful and breezy personality, which covered many acts of unadvertised kindness. His was a life well spent in the service of his profession and the State.

We record with regret the death of Dr. OWEN FOULKES EVANS, one of Liverpool's most well-known general practitioners. Dr. Evans qualified M.B., C.M. at Edinburgh in 1890 and took his M.D. of that University in 1894. Almost immediately after qualifying he began practice in Liverpool, where he was to remain for all his active medical life until failing health obliged him, very unwillingly, to retire in 1936. Keenly interested in the clinical rather than the scientific side of medicine, Evans soon gained a reputation as a good diagnostician. His examinations were always very thorough, and he did not hesitate to call in a specialist if in doubt. His patients were his absorbing interest; nothing he did for them was too much trouble. He was never in a hurry and never too busy to sympathize with them in their sorrows. His large practice allowed him little time for public or social work, but during his summer holidays he showed another side of his character in his complete enjoyment of a change of interests, of scenery, and of the many and varied entertainments which go to the making of a successful holiday. It was during these holidays that his deputies came into contact with his patients and realized their confidence in and affection for their "beloved physician." He had been a member of the British Medical Association for forty-five years.

Dr. ALGERNON DUTTON BRENCHLEY, who died at Bournemouth on December 5 at the age of 86, received his medical education at the University of Aberdeen and at Guy's Hospital, qualifying M.R.C.S., L.S.A. in 1875. He took the M.B., C.M. of Aberdeen in 1877 and three years later the M.D. of that university. He became a member of the Society of Apothecaries in 1876 and was Master of the Society in 1924–5. He was Senior Past Master and Father of the Court of Assistants at the time of his death. Dr. Brenchley had practised for many years at Denmark Hill, London.

We regret to record the death, at the age of 73, of Mr. THOMAS CAMPBELL GREY at Hexham on December 17. He was educated at the Bristol Medical School, receiving in 1889 the Committee Gold Medal of the Bristol General Hospital, and at the London Hospital. He took the Lady Haberfield Entrance Scholarship and the Martyn Memorial Scholarship in Pathology and was also a prizeman in medicine, midwifery, pathology, and anatomy. He qualified M.R.C.S., L.R.C.P. in 1890 and two years later took the F.R.C.S. He was assistant physician at the Bristol General Hospital and prosector and assistant demonstrator in anatomy and physiology at the Bristol Medical School. He then held the post of resident medical officer at Swansea Hospital and later went into practice at Weston-super-Mare, to which town he returned after a short period at St. Neots. He later moved to Camborne, being honorary medical officer to the local hospital and honorary surgeon to the Miners' Hospital, Redruth. He had been a member of the British Medical Association for thirty-six years and in 1903–4 was honorary secretary of the old Truro Division. In 1904 he moved to Corbridge-on-Tyne and three years later went to Basingstoke, where he was honorary medical officer to the cottage hospital, then to Wrexham in 1908, only to return to Hampshire, this time to Fordingbridge. In 1911 he moved to Cheltenham and then back to Corbridge-on-Tyne in 1915, and to Newcastle-upon-Tyne in 1921 until 1926, when he retired to Hexham.

We regret to announce the death, on December 24, of Dr. HELEN YOUNG CAMPBELL at St. Andrews. Dr. Campbell was the daughter of the late Mr. W. Y. Campbell of Durban, and took the Scottish triple qualification in 1907. She was for a time in practice in South Africa, where she wrote *Practical Motherhood* for mothers who lived in the remote

backveldt. On her return to England she worked at the Infants Hospital, Westminster, on problems of infant nutrition, and in 1911 was appointed medical officer to the Babies' Welcomes, which the Bradford Health Committee had recently taken over. She exhibited the intense and eager pioneer spirit and fearless courage needed to build from humble beginnings what became an outstanding piece of preventive medicine—the City of Bradford Infants' Department. Dr. Campbell worked untiringly at her conception of a clinic-hospital run by the city for the city, where the city's infants could be given a healthy start in life. She saw a scheme where that much-neglected group, the pre-school children, could be included and supervised up to their reaching school age. She would spend weeks of time studying and restudying the figures in her annual reports to see what fresh light they might throw on the problem of infant life and mortality. At various times she was offered work which would have given her wider scope in teaching, but all these she refused, saying that her work in Bradford was not yet completed. Her reward was the remarkable improvement in the health and physique of the children of Bradford and the reduction of the infant mortality rate. The continuation of the supervision of children until reaching school age, a development of maternity and child welfare work which she had much at heart, was not achieved in Bradford in her time. Her health did not stand the demands she made on it, time did not bring about the hoped-for improvement, and ultimately she resigned. She spent her retirement studying in the library of St. Andrews and writing, until latterly pain and infirmity kept her to her room.

We regret to announce the death of Dr. GODFREY CARTER, formerly senior surgeon to the Sheffield City Police. Godfrey Carter qualified M.R.C.S. in 1880 and L.R.C.P.Ed. in 1884. In 1894 he took the M.R.C.P.Ed., and two years later the M.B., Ch.B.Vict. and the D.P.H.Lond. He was senior assistant house-surgeon at the Leeds General Infirmary, and demonstrator in anatomy and internal examiner in forensic medicine at Sheffield University. He was an external examiner in forensic medicine in the Universities of Leeds, Edinburgh, and Birmingham. Dr. Carter was for about twenty-five years in general practice in Sheffield. In 1923 he was president of the Medico-Chirurgical Society. For several years he held the post of surgeon to the Sheffield Police, and as such had a wide practical experience of forensic medicine, on which subject he was lecturer in the University. He was much interested in the detection of alcoholism by urinary analysis, a subject on which he published, in collaboration with Mr. Southgate, an article in this *Journal* in 1926. After leaving Sheffield he went to live in Somerset, where his forensic experience soon obtained for him the post of pathologist to the Taunton General Infirmary, and much medico-legal work over a wide district of the South-Western Counties. He was a vice-president of the Medico-Legal Society, and had been a member of the British Medical Association for fifty-three years.

We regret to announce the death on October 28 in his sixty-third year of Dr. JOHN BENJAMIN VALENTINE WATTS at Barberton, Transvaal. Dr. Watts was born at Durban, was educated at Maritzburg College, and studied medicine at Bristol, graduating M.B., B.S. of the University of London in 1906. He held the posts of casualty officer and junior house-surgeon at the Bristol Royal Infirmary, house-surgeon at Bristol General Hospital, and resident medical officer at Newport, Mon., Hospital, before, in May, 1907, he settled in practice in Barberton, Transvaal, where he gained a reputation as a surgeon. In 1925 he retired from practice for five years and then restarted practice in Cambridge, East London, retiring again early in 1939. He was a member of the British Medical Association and was chairman of the East London Division in 1935–6.

All those interested in international hygiene will learn with regret of the death in Paris on October 7 of CAMILLE BARRÈRE, Ambassador of France, Member of the Institute, and delegate for France on the Permanent Committee of the International Office of Public Health. It was to Barrère's inspiration and active support while Ambassador at Rome that the convention founding the International Office of Public Health was drawn up in 1907. He had been led early in his diplomatic career to take an interest in international hygiene, and had presided at four international conferences concerned with the Danube, Egypt, and the Suez Canal. He realized the importance, little recognized then but widely accepted now, of protecting commercial interests and preventing the spread of epidemics by a rational and uniform system of quarantine control throughout the world. Barrère represented France on the Permanent Committee of the Paris Office from its inception, and though he was often pressed to assume the presidency, his modesty always prevented him from doing so. He never intervened in technical discussions, but his advice and support were invaluable on questions concerning the organization and diplomatic status of the Office. In spite of advanced age and failing health he lost none of his interest in the work of the Office, nor any of his charm and courtesy to even the most junior delegate. To have known him was to realize why, of all French titles, that of "Ambassadeur de France" commanded the highest respect, and it could be wished that he had been spared seeing the end—as he saw the beginning—of the Third Republic.

The following well-known foreign medical men have died: LOUIS SPILLMANN, dean of the medical faculty of Nancy, aged 64; Dr. POUSSON, honorary professor of the Bordeaux medical faculty, aged 87; Dr. ROCAZ, honorary physician to the children's hospital at Bordeaux; Dr. GLENN E. CULLEN, professor of biochemistry in the University of Cincinnati; Dr. A. MCGLANNAN, emeritus professor of surgery at the University of Maryland School of Medicine, aged 67; Dr. HENRY CLARKE COE, emeritus professor of gynaecology at the New York University College of Medicine, aged 84; Prof. ABIEU FIALHO of Rio de Janeiro; Dr. PAUL PINTO ESCALIER of Buenos Aires; Dr. E. P. FIDANZA, professor of dermatology at Rosario, Argentina; Dr. ERNEST A. PRIBRAM, formerly professor of pathology in Vienna University, aged 61; Dr. ALEXANDER SWANSON BEGG, dean and Waterhouse professor of anatomy at the Boston University School of Medicine, aged 59; Dr. MAX ASKANAZY, professor of morbid anatomy at Geneva; Dr. HECTOR CHRISTIANI, formerly professor of hygiene and bacteriology at the University of Geneva, aged 78; Dr. FRANCIS PARK LEWIS, co-editor of the *American Journal of Ophthalmology*, aged 85; Dr. CHARLES NICOLL BANCKER CAMAC, emeritus professor of internal medicine at the New York Polyclinic medical school and hospital, aged 72; and Dr. ARTHUR CARADOC MORGAN, associate editor of the *Pennsylvanian Medical Journal*, aged 70.

The Services

CASUALTIES IN THE MEDICAL SERVICES

ROYAL NAVY

Temporary Surgeon Lieut.-Commander JOHN BARCLAY BARR, R.N.V.R., whose death through enemy action is announced, was a graduate of the University of Glasgow, where he took the degrees of M.B., Ch.B. in March, 1936. For over two and a half years he was house-surgeon at the Western Infirmary, David Elder and Southern General Hospitals, Glasgow. He went on a voyage round the world as a ship surgeon, and his arrival at Port Said on the homeward trip coincided with the outbreak of war. He immediately returned home, and within a month of his arrival was appointed to one of His Majesty's ships. A native of Blantyre, he was educated at St. John's Grammar School, Hamilton, and at Biggar High School. He was a King's Scout. He joined the British Medical Association in 1936.

ROYAL ARMY MEDICAL CORPS

Lieut.-Colonel WILLIAM ARTHUR ROSEBERY SPONG died suddenly on December 22, 1940, at the age of 57, after a very short illness. He was born on April 11, 1883, and graduated M.B., Ch.B. at Trinity College, Dublin, in 1907. In the same year he entered the R.A.M.C. as lieutenant, being promoted major in 1919, lieutenant-colonel in 1931, and retiring in 1935. He did a long term of duty in India. During the war of 1914–18 he was for a time employed on embarkation and distribution duties in Karachi, and for his services was mentioned in dispatches. He was an Associate of the Order of the Hospital of St. John of Jerusalem in England. After retiring he settled in practice in Sutton Benger, Chippenham, and on the outbreak of the present war was appointed officer commanding a military hospital. He joined the British Medical Association

in 1910. Lieut.-Colonel R. H. L. writes: The many friends of W. A. Spong will hear with deep regret of his sudden death. He had spent many years of his Army service in India, and when he retired from active service a few years ago he settled in a busy country practice in Wiltshire, returning to serve on the outbreak of war. He was always a hard worker, never sparing himself either in doing his job or in looking after the welfare and comfort of those under his care, whether patients or personnel. He was generous to a fault, and it was his delight to know the Christian names of each child in his practice, chatting with them all in easy fashion, whether they came from the labourer's cottage or the mansion. A keen shot and angler both at home and abroad, he was happiest when he was able to snatch a few hours' respite to visit the banks of some river, full of anticipation, and, more often than not, reluctantly coming away with very satisfactory results. Our heartfelt sympathy goes out to his widow and children in their great bereavement

Lieut DAN BRADBURY died recently at his parents' home in Sheffield from shock when attempting to repair an electric light fault. He was educated at the University of Sheffield and graduated M.B., Ch.B. in 1939. He joined the British Medical Association in the same year.

Lieut. LOUIS HENDERSON MACDONALD is posted as "Died" in an Army casualty list published on January 6. He graduated M.B., Ch.B. at Birmingham University in 1924, and took the M.R.C.S., L.R.C.P. in the same year. He had been assistant medical officer to the venereal diseases department and house-surgeon and house-physician at the General Hospital, Birmingham, and assistant pathologist and bacteriologist at the Dudley Road Hospital, Birmingham. At the outbreak of war he was in practice at Southampton.

The name of Lieut. JAMES PATTINSON THYNE is included as "Killed" in an Army casualty list published on December 28. He received his medical education at King's College Hospital, and qualified M.R.C.S., L.R.C.P. in 1928. He had held the post of house-surgeon at the hospital, and before the outbreak of war was in practice at Wandsworth.

DEATHS IN THE SERVICES

Surgeon Rear-Admiral FREDERICK JOHN LILLY, R.N. (ret.), died suddenly at Hove on December 12, aged 82. He received his medical education at St. George's Hospital, and took the M.R.C.S. in 1882 and the L.R.C.P.Ed. in 1883. Entering the Royal Navy soon afterwards, he was promoted to fleet surgeon in 1900, became deputy surgeon general in 1907, and retired as surgeon general in 1912, this title being subsequently altered to surgeon rear-admiral. He had seen a lot of active service in various expeditions: in East Africa in 1892–3, when he was mentioned in dispatches and received the Africa General Service medal with a clasp; in the South African War of 1899–1902, as staff surgeon of H.M.S. *Forte*, he landed and served in the Naval Brigade in the relief of Ladysmith, and was present at the actions of Colenso, Spion Kop, Vaalkranz, Pieters Hill, and Elandslaagte, was mentioned in dispatches, and received the Queen's medal with two clasps; and as fleet surgeon of H.M.S. *Doris*, flagship, he served in the Gambia punitive expedition of 1901 and was mentioned in dispatches. He had been a member of the British Medical Association since 1884.

Colonel ALBERT GEORGE THOMPSON, C.M.G., D.S.O., late R.A.M.C., died at Redruth on December 11, aged 73. He was born at Islington on May 24, 1867, and was educated at the University of Edinburgh, where he graduated M.B., C.M. in 1891, also taking the D.P.H. of the Scottish Colleges in 1905. Entering the Army as surgeon lieutenant in 1892, he became lieutenant-colonel in 1915, received a brevet colonelcy in 1918, and retired in 1919. He served in the South African War in 1902 in the Orange River Colony, and received the Queen's medal with two clasps, and in the war of 1914–18, when he was five times mentioned in dispatches. He received the D.S.O. in 1917 and the C.M.G. in 1918. He also received the Médaille de la Reconnaissance Française. He had been a member of the British Medical Association for twenty-seven years.

Colonel SYDNEY GEORGE BUTLER, D.S.O., late R.A.M.C., died at Hove on December 29, 1940, aged 66. He was born on May 18, 1874, received his medical education at the London Hospital, and took the M.R.C.S., L.R.C.P. in 1897. After filling the post of house-surgeon at the Poplar Hospital he entered the R.A.M.C. as lieutenant in 1899, became lieutenant-colonel in 1915, and retired with the rank of colonel in 1920. He served in the South African War of 1899–1902, when he took part in the relief of Ladysmith, including the actions at Colenso, Spion Kop, Vaalkranz, Tugela Heights, and Pieters Hill, also in the operations in the Transvaal and in Cape Colony, and received the Queen's medal with five clasps and the King's medal with two clasps. He also served throughout the war of 1914–18, when he was twice mentioned in dispatches in 1914, in which year he received the D.S.O. From June, 1919, to January 1920, he was consulting surgeon to the British troops in France and Flanders, and in 1920–1 was consulting surgeon to the British Army on the Rhine. After retiring he served for a time as surgeon in the P. & O. Company. He had been a member of the British Medical Association for thirty-three years.

Colonel WILLIAM LECKIE WEBSTER, M.C., late R.A.M.C., died in London on December 1, aged 53. He was born on November 3, 1887, and was educated at the University of Edinburgh, where he graduated M.B., Ch.B. in 1910. He entered the R.A.M.C., from the Special Reserve, as lieutenant in 1911, received a brevet majority in 1919, and became full colonel in 1937. He had just been placed on retired pay on account of ill-health. He served in the war of 1914–18, was twice mentioned in dispatches in 1918, and received the M.C. as well as the medals. He leaves a widow. He had been a member of the British Medical Association for twenty years.

Medical News

In a statement made early this week Sir Wilson Jameson, Chief Medical Officer of the Ministry of Health, said that in the crowded deep shelters there were at present only stray cases of infectious diseases. He gave the following figures for the principal infectious diseases notified in 1938, 1939, and 1940 down to December 14: *Scarlet fever*: 1938, just over 99,000; 1939, just over 76,000; 1940, nearly 63,000. *Diphtheria*: 1938, 65,000; 1939, 46,700; 1940, just over 44,000. *Pneumonia*: 1938, 45,000; 1939, 42,000; 1940, nearly 46,000. *Dysentery*: 1938, 4,170; 1939, 963; 1940, 2,900. *Enteric fever*: 1938, 1,300; 1939, 1,500; 1940, 2,800. *Cerebrospinal fever*: 1938, 1,288; 1939, 1,500; 1940, approximately 12,500.

A meeting of the Pharmaceutical Society of Great Britain will be held at 17, Bloomsbury Square, W.C., on Thursday, January 16, at 2.30 p.m., when Mr. A. Mortimer will give an address on "Drug Supplies in Wartime."

The *Journal of the American Medical Association* announces that forty-eight physicians have formed a medical and surgical supply committee, with offices at 420, Lexington Avenue, New York, and undertaken a nation-wide campaign for surgical and medical supplies to equip 500 first-aid stations and field hospitals to help in caring for the British war wounded.

Dr. Charles Armstrong, senior surgeon of the United States Public Health Service, National Institute of Health, Washington, D.C., delivered the first Harvey Society Lecture of the current series at the New York Academy of Medicine on October 3, his subject being "Studies on Lymphocytic Choriomeningitis and Poliomyelitis."

Some members of the Pharmaceutical Society serving in the R.A.M.C. are at present in Iceland. They are faced with long winter nights when almost the only form of recreation is reading. Gifts of books—technical and fiction—would be very welcome and should be dispatched to Sergt. C. W. Vokins, R.A.M.C., Sergeants' Mess, 487 Field Ambulance, c/o Army Post Office 500.

The name of Dr. Donald Shrewsbury Todd-White has been brought to notice for brave conduct in connexion with civil defence.

The British Government has received a loan from Dr. J. V. Landor, physician and registrar of the General Hospital, Singapore, of £1,000 free of interest for the prosecution of the war.

An institute for endocrinology has been founded at São Paulo, Brazil, consisting of three departments devoted respectively to experimental endocrinology, human endocrinology, and a laboratory for testing opotherapeutic products.

Dr. Otto Loewi, for many years director of the faculty of pharmacology at Graz University, has been appointed research professor of pharmacology at New York University.

Medical Notes in Parliament

Protection of Practices in Bombed Areas

Mr. GROVES asked Mr. MacDonald on December 19 to consider formulating a scheme for the protection of panel practices of medical practitioners who had been injured or whose houses had been so damaged by enemy action that they were unable to continue for a time in practice. Mr. MACDONALD said he understood that insurance medical practitioners who suffered hardships by reason of air raids received every possible assistance from the Insurance Committees and their professional colleagues. Where his approval would be necessary to an extension of the Protection of Practices Scheme in operation in any area to cover practices in temporary abeyance as the result of air raids, he would be prepared to consider the matter on application from the Insurance Committee.

Notes in Brief

The recommendation of the Dental Benefit Council that there should be an increase in the scale of fees for the dental treatment of insured persons was rejected by the National Health Insurance Joint Committee on the ground that justification had not been shown for such an increase at the present time.

EPIDEMIOLOGICAL NOTES

Infectious Diseases for the Week

In England and Wales in the first week of December there were increases only in the incidence of pneumonia and whooping-cough as compared with the previous week. The fall in the incidence of measles, although probably only temporary, is gratifying. As regards the probability of an epidemic of influenza, factors difficult to assess with accuracy, such as the environment and nutrition of the population at risk, are probably more important than hypothetical alterations in the virulence or dispersal rate of the causative agent or supposed changes in the "epidemic constitution." The time is opportune for a controlled trial of the available antigens in influenza prophylaxis, but at present there are difficulties in the way of applying it on a scale sufficient to yield reliable results.

Registrar-General's Annual Report for Northern Ireland

There was a decrease of 502 births in 1939 compared with the previous year, the rate of 19.5 per 1,000 of the estimated population being 0.5 per 1,000 lower than in 1938. The rate for the aggregate of urban areas exceeded that for the rural areas, Londonderry C.B. showing the highest and Co. Fermanagh the lowest. Illegitimate births were 4.7% of the total births registered, and were slightly in excess of the previous year. The death rate was 13.5 per 1,000, or 0.2 below the rate for 1938; with the exceptions of 1930 and 1934 this was the lowest rate recorded in the present century. In each successive quarter of the year equivalent death rates were: 16.5, 13.5, 11.4, and 12.8. The death rate for the aggregate of urban areas was lower than that for rural areas, Belfast C.B. recording the lowest and the counties of Londonderry and Tyrone, jointly, the highest. There were 1,779 deaths among infants under 1 year, or 70 per 1,000 births registered, compared with 75 in the previous year. In 1939 and 1938 the infant mortality rates for England and Wales were 50 and 53, for Scotland 68 and 70, and for Eire 66 and 67, respectively. The rates recorded in urban areas are generally considerably in excess of those in rural areas. The infant mortality rate among illegitimate children was 131, compared with 149 in the previous year; for legitimate children the rate was 68 and 72 per 1,000 respectively. Deaths from the principal epidemic diseases, except influenza and diarrhoeal diseases of children under 2 years of age, were fewer than in 1938. The decrease in the mortality from measles is marked, but only slight in respect of enteric fever, scarlet fever, whooping-cough, diphtheria, and dysentery.

No. 49

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended December 7, 1940.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1940 (a)	1940 (b)	1940 (c)	1940 (d)	1940 (e)	1939 (Corresponding Week) (a)	1939 (Corresponding Week) (b)	1939 (Corresponding Week) (c)	1939 (Corresponding Week) (d)	1939 (Corresponding Week) (e)
Cerebrospinal fever	144	3	36	6	* 5	27	4	6	1	2
Deaths		3	5				1	—		
Diphtheria	1,424	64	542	34	34	994	22	227	46	34
Deaths	35	—	11	—	1	26	3	11	3	1
Dysentery	92	2	50	—	—	50	3	28	—	—
Deaths			1	—	—			—	—	—
Encephalitis lethargica, acute	1	—	1	—	—	2	—	1	—	—
Deaths		2	—				—	1		
Enteric (typhoid and paratyphoid) fever	23	1	5	9	1	29	1	5	10	1
Deaths	—	—	—	—	—	1	—	—	—	—
Erysipelas		24	61	6	3			58	12	7
Deaths		—	1				—	—		
Infective enteritis or diarrhoea under 2 years										
Deaths	41	1	9	6	3	29	3	7	7	2
Measles	14,147	325	397‡		9	2,225	20	11		47
Deaths	12	1	2	3	—	—	—	—	2	—
Ophthalmia neonatorum	80	—	9		—	86	8	24		—
Deaths										
Pneumonia, influenzal*	782	37	12	—	10	440	18	12	1	8
Deaths (from influenza)	42	8	3	1	—	23	3	—	—	2
Pneumonia, primary			205	12				146	17	
Deaths†		50		17	8		9		8	6
Polio-encephalitis, acute	2	—				2	—			
Deaths		—					—			
Poliomyelitis, acute	18	—	2	—	—	4	1	—	—	—
Deaths		—	—				1	—		
Puerperal fever	2	2	17	2	—	2	2	11	2	1
Deaths		1§					1§			
Puerperal pyrexia	109	3	22		—	128	4	16		—
Deaths										
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,597	69	231	62	58	1,233	37	179	45	102
Deaths	1	—	—	—	—	2	—	—	—	—
Small-pox	—	—	—	—	—	—	—	—	—	—
Deaths		—	—	—	—		—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths		—	—	—	—		—	—	—	—
Whooping-cough	2,421	17	226‡		23	1,183	19	27		4
Deaths	13	9	2	—	1	2	—	—	—	1
Deaths (0-1 year)	340	22	73	38	17	290	42	48	34	8
Infant mortality rate (per 1,000 live births)										
Deaths (excluding stillbirths)	5,979	908	646	205	132	4,584	712	657	179	134
Annual death rate (per 1,000 persons living)			13.1	13.7	11.6			13.3	12.0	11.8
Live births	4,484	334	742	322	174	4,764	627	797	251	237
Annual rate per 1,000 persons living			15.0	21.5	15.2			16.1	16.9	20.8
Stillbirths	159	7	26			256	28	37		
Rate per 1,000 total births (including stillborn)			34					44		

* Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

† Since January 1, 1940, figures for London (b) have been for deaths from all forms of pneumonia; the corresponding figures for 1939 relate to deaths from lobar pneumonia only.

‡ Notification in certain administrative areas only.

§ Death from puerperal sepsis.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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QUERIES AND ANSWERS

Dysmenorrhoea

Dr. J. E. O'LOGHLEN (Clapham Common) writes: "Country Practitioner" (December 28, p. 924) does not give sufficient details to make an exact diagnosis. Assuming that the gynaecological findings are negative, further interference in the way of examination or any kind of operation is not only contraindicated but might even be harmful; so also would be the application of antispasmodics such as belladonna, papaverin, codeine, etc. Endocrine therapy should only be prescribed when the diagnosis is confirmed. A good plan is to do a tolerance test of adrenaline, cocaine, and belladonna. This I was accustomed to do many years ago when working with Adler in Vienna. Might I also warn against the unnecessary dilatation and curetting operation? Adler did 1,400 in cases where the gynaecological findings were negative; less than 1% were relieved. Novak considers that more than 90% of cases are psychological. Oskar Frankl, with whom I was privileged to work, was of the same opinion, and would never agree with mechanical dysmenorrhoea, as is instanced by the large numbers of perfectly healthy women who have retroversions or anteflexions without discomfort until the condition is discovered accidentally. The age of the patient at the first menstruation, and its time, character, and duration, are of the utmost importance. Was it preceded by proper instruction in sex hygiene, or did haemorrhage appear suddenly, as in haemoptysis? Try and get a full family history, as well as details of occupation, hobbies, sports, and social contacts. Dysmenorrhoea may sometimes be allergic. Several cases have been described in America by Dudley Smith. Fifteen years ago I treated more than 600 cases of dysmenorrhoea by diathermy with excellent results. I thought then that the relief from pain was due to the diathermy, but have now come to the conclusion that it was mostly suggestion. Many of these cases are relieved by painting the inside of the nose both sides with a 5% solution of cocaine. The patient will of course not know what your magic drops are.

Dr. DUNCAN BALLANTINE (Rotherham) writes: May I suggest to "Country Practitioner" that he try the effect of benzedrine on his patient with dysmenorrhoea. I have now seen several patients who have been amazingly improved by this means, and certainly the price is far from exorbitant. The drug is said to be an antispasmodic to uterine muscle, and in addition gives the patient a marked feeling of well-being, in contrast to the usual depression. The dose suggested by the makers is two 5-mg. tablets taken immediately the symptoms arise, and if necessary repeated in four hours. It is as well to remember not to take the drug in the evening in case of insomnia, and it would be safer to test the patient's reaction by giving a smaller dose at some other time, as there are some people who have unpleasant effects following benzedrine.

A Case of Partial Impotence

"Q.R.S." writes: I wonder if any readers could give me information about a curious condition of semi-impotence which does not appear to fall into any of the more usual categories. For one year the patient has suffered from (*a*) diminished sensitivity to sexual excitement; (*b*) incomplete erections—that is, the corpora cavernosa penis erect strongly but the corpus cavernosum urethrae and glans hardly at all. A famous sexologist to whom the case was referred assured me it was purely functional in origin, but I am unconvinced. Up to a year ago the patient was strongly sexed and erections were complete. Is there any organic condition which would account for the specific distribution of the impotence?

Income Tax

New Partnership—Military Service

"T." purchased a share in a practice as from October, 1939, but did not acquire any book debts. In June, 1940, he joined the R.A.M.C., and pays into the partnership account his Army pay. A locumtenent has been engaged at £650 per annum. "T.'s" share of the partnership assessment for the year to April 5, 1941, is based upon the firm's profits for the year 1939; his cash receipts are of course much less than that amount.

*** It should be borne in mind that the liability is not calculated in such a case as this on cash receipts; "T." is liable for tax on his share of *earnings*, whether they have been paid to him or not. In the early years this does involve some financial hardship, but normally there is no escape from it. In the special circumstances, however, it is quite possible that relief can be obtained under Section 23 of the Finance Act, 1940. That section provides that where the earnings of the actual year fall short of the amount assessed by more than 20%, then the assessment shall be adjusted to the actual basis. We therefore advise "T." to write to the inspector of taxes intimating that a claim will be made under the above-mentioned provision when the necessary information is available. The inspector may properly ask for a payment on account to be made in the New Year if the facts are not ascertainable in the fairly near future.

LETTERS, NOTES, ETC.

Reflections on an Address to Medical Students

Dr. REDMOND ROCHE writes: In a vain wooing of sleep one night in "a safe area," where the enemy planes were making a noise, I was reading with much interest my friend Prof. Ryle's inspiring address to medical students of Cambridge at the customary opening of the session (November 16, p. 657), not, indeed, with the idea—far from it—that it would act as a soporific. As usual on such occasions, familiar to us all, a glowing picture was drawn, and rightly, of the hopes and aims that should animate the student and potential doctor. Just then—2 a.m.—in my doctor-host's house the 'phone sounded and the familiar night call was heard. I have never noticed this incident in the doctor's future, not by any means uncommon, mentioned in these addresses. Another reflection occurred to me on reading that ours "is almost the only scientific career remaining which is not concerned in some way with the destruction of life." Are there not among us, a few they may be, but enough to spoil the assertion—the advocates of euthanasia and the abortionists? And which of us, big or little, can look back and feel that by something he has done, or failed to do, a life has not been sacrificed? These remarks are doubtless hypercriticism. A pleasing set-off is the suggestion—not so usual in these addresses—of the splendid opportunities a student or doctor has, of which he should avail himself, for "developing a social conscience."

Medical Students for Shelters

Dr. E. M. H. HERBERT (London, W.1) writes: Having had an opportunity of observing the work done in some of the shelters and witnessing the activities of voluntary helpers and doctors, I think that unrivalled opportunities exist to give our younger colleagues a chance to study conditions under which the population is living. Why should not our medical schools detail some of their students to help in the posts and shelters? It would give them a wonderful chance to "study medicine in the raw," and also give them an understanding of social conditions. I think this is an ideal ground for learning general practice, besides being a great help to the community.

Gentian Violet in Stomatitis

Dr. RALPH JONES writes: Some time ago I sent a bad case of stomatitis in an adult to hospital, and was advised to try daily swabbing with a 1% solution of gentian violet. I gave this treatment a thorough trial with both children and adults, and found, like C. H. Smith and H. B. Johnson, who are quoted in your annotation (December 14, p. 838), that it never had the slightest effect.

Collodion Treatment of Herpes Zoster

Dr. CRANSTON WALKER (Birmingham) writes with reference to this subject (*Journal*, January 4, p. 38): Before covering the eruption with collodion it is advisable to be sure that secondary infection is not already established. Otherwise the patient is liable to return, or go elsewhere, with a new pain, local tenderness, malaise, and a raised temperature. Relief of these symptoms can be obtained by incising the covering of collodion and letting out the pus. No anaesthetic is required.

Corrigendum

The degrees of M.B., B.S. should have appeared after Lady Ruth Balfour's name in the New Year Honours list (January 4, p. 25).